### UNIVERSE RED: RUSSIA'S IRON GRIP ON

THE HIGH FROMUER

### **AIRWAVE APOSTLES:**

BEAMING THE GOSPEE FROM SPACE-AGE PULPTS

### TANKING:

REACHING THE OUTER UMITS OF INNER SPACE

### COMPUTER WORLDS: BUILDING-YOUR OWN

REALTIES IN 3.D

### FICTION:

ROBERT SHECKLEY





AUGUST 1990

### EDITOR & DESIGN DIRECTOR: BOB SUCCIONE

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ASSOCIATE PUBLISHER KATHY KEETON ASSOCIATE PUBLISHER (INTL) FRANCO ROSSELLINE

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# FIRST

By Martin Zlotnick

 Large federal expenditures to demonstrate commercial technology have a king and well-documented record of fature. These include the nuclear ship Sevenish and many offices. The Length Creation is regarded in the provided set of the provide

But double coefficients (course Carls that, copper don Cluby (cont rates before - particul (app documents) software - particul (app docume

This values could be available "When the payment mits reactive handwares for its ownana, the Respect Applies indents or payms to defeater. If valuely indents when payms for defeater. If valuely indents are payment but when he of most to but yrings for use available the government, he tapes a different efficience.

The generatives reveage of before the sequences of the project is provide in a radial distant delete him. The exponent workship call advectary are not find weblight to how accuracy instead distances controls for present sectors and day must weblight to how accuracy instead distances controls for present sectors and practical in thereins, when is prefixed in the conservative of the present galactic in the present of the sector and practical interview. Then is prefixed in the present advector of the present galactic to present advector of the sector galactic interview. The present galactic interview and the sector galactic to present advector of the sector galactic interview. The present galactic interview and the sector galactic prefixed in the sector galactic pr

Dates this mean only makery and space isochrotogies bait, benefit from government support? This government can their solve the major problems of the cavies exponently such as the limited supples of liquid taxes and the fisses, to the environvent?

No. The government has a certral rise investige occurshic policy preventing tax incentives and making patient bases and other unive and inquisitions that encounting technologoual incestation. Generating right qualities environment, mentione industry will risk the capital to develop the technology and is noise the demand shares. Such methodage standes guod chance of basing between and your otherword in based on the standard otherword in the between the standard otherword in based otherword in the between the standard otherword in based otherword in the standard otherword in based otherword in the standard otherword in based otherword otherword otherword in the standard otherword otherword in based otherword otherwo sold to make it so

At bggthter indirections agon active is can take a greater impact on developing commercial lacticology that government support of R&D ctr. But government at sistence can elso pilay a major rola

Just as it characteria score) pointwis enveronment, this government should featur a sound technological environment. It should help furnish technological score, intermation, and ideas that stemulate technologicitis microsofty.

The government can obvieto measurement technology and induced address, produce paid descripting the properties of methods, and carby out theoretical and addressmental analysis of phenythera to their or spaces in prover induced produces while provide the induced technology and means angle comparison but where induced means and another induced and means and another induced the loss of the bits comparison with foreign induced loss on an equal foreign.

In the case of removing the automobile government should not try to build an improved auto buil should isomicir ro search to attact engreeses in the automotive inclusion despression. May report to build an improved auto

The approach though while bookies government can be more effective than industry in supporting beaut reservork it does not have to operate under the profit, construction of indusity. The government have a long record of successfully reservo industry is officativeness through such assistance

The antice transferred part of the part memory. In the part of the part of the transferred part of the transferred part of the transferred to part of the transferred part of the transferred to part of the transferred part of the transferred to part of the transferred part of the transferred to part of the transferred part of the transferred to part of the transferred part of the transferred to part of the transferred part of the transferred to part of the transferred part of the transferred to the transferr

These precessions above how out gotempeter can work begin to steam the tweet of indirectogy an America. Let the governmanti exposer basic research that prodictors the information engineers in inducting meet, and let provide industry respect. The assertations. DO

Martin Zibittack at a project officer with the Deperature of all Energy to Weakington. O E

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ED DRANK

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A second second

Also in this month's issue Timothy Bey chronoles a "smange mutation of faith" & ONN Be into cyrbanisor o'i i uchwenter Chennery o'r ad sin kontreng by the chennery o'r ad sin kontreng by how and hu'i lacenterb by how make by how the sin kontrend by how and distribut with how makes by how and distribut lakes and a myster, a the original lakes and a myster, a the antibility of the sin and a myster, a the attent them senders, they he is a sinter them senders, they he is attend the sinter they are sinter to sender the sinter the senders and senders and the sinter or dense factors calles. By his a site in or dense factors calles a by his a site in or dense factors.

Belighon nauda a place to relac. to grataway from all all the multitude haud to maintains at basebal the secold on percent and oplaced in mer pose- the soleantwise in mer pose- the soleantwise in the place of the place of many analysis and place of the place of psychology fast but an actual means of anxway. Others claim this a chamber of anxway. Others claim this a chamber of back and emerged with some association emerged back and emerged with some association emerged back and association emerged .....

In a homer professor of German and helds a PhD fram Johns Hogkins University He has been a hoelance where a note 1076, and has work has appeared in many invespapare in America and altroad Gorman's interest in coptioning the inner workings of the human mind allos from his close anwheremit with the counteroularement on Blacks.

Dur August potenti fivetures the veriof therenee and Rudol Hauser. An exponent of Partassic Healers, a gento of War II Nerma. Housers provides an urbagentalite pairly enthal "Nervor of Self (page 52) With Rom Way an art export and freiso of Healmer's scrock the early Forless turnshealths toot. Phopae youheit to a visual freiso.

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Autor Register

THE CORPORTION

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### COMMUNIC/ATIONS

### Infests Challenges

Ka suppose environment i here montagene ka suppose A Antone ("Lookene "Lookene "Lookene Towen Gance: New (1960) Had se loanogod on her ricknon sittig gener meru ni Mas we edud be thorum hui touse loady we must indenstand that rus every step forwards a ginny tilber. Some are singe backward hat the universe is to vest and the earth as produced into the generate taken tower we produced into the generate taken tower her has ever anowment

> Lynn Holland San Francisco Calif

capit basis you utamus Wohansel Heading upper essite to make the set of the sol long it am exceled for my heurysteroid winder the set of the set of the set of the infinite challenges for him. I prey our nation does not fail to encourage him in nation does not fail to encourage him in new vertices.

We although not feast the unneveloped mystenes on Earth and in space. There will always be new mystenes and obeltenges awaring us. What a gift space int Pamela J. Partindge North Arroyo. Manne

### Humanizing Poro

In an otherwise good exploration of sexual variation on we disturbing point was read in John Stotlenberg's anche "Future Gaugestein by Dr. John Monry that pomographic films such as High Res to used for the sexual enthrection of chicken

Herman skatochi pa ze vstverable hings har much be narude whi lose and carro glies concepts har seen to escape the Money in his entrusasari () holdern maet Rean such detrocky human track biolos assault and anto y even would be d dobout vature in a sey seen of anyway i ung stabile in their per may be befred by its doborcky deharmeng aspects

When Money cites spes as an example pre-must remember that, for epes, sexual reheansal is a necessary tool for euriwal They lead short, hazardous lives, indeed please keep in mind, first of all sex is only the means for perpetualing the species

I doubt in its an necessary as Money beleases to train tob in sexual encareal given man a rather long childhood and respectably the use of such a chalastroue means.

Taionto Ort, Careste

Ethnik it interesting that Dr. John Monay of Johns Hopkins School of Medione advocates the use of pomography in children's poweel education

How can one condona the use of a vocal medium that depicts people as copularing animals whip worlding sackets rapiets and various other freeter to teleph the young about secality?

I have never percensity seen any percegraphic matiwnal that dist not degrade the female in some fastion either through physical humilation or by deputing her as not being able to get exolution.

I should think that Dr Money would be measified in presenting the six act as one showing tendemess cleaning of two people and an ultimate sharing of two people.

Is a that the good doptor has never expensional trap sexuality or has the good doptor been softing just a bit too much atter?

> Storing R Johnson Pain Spongs Calif

#### Undipested Socks

I don't understand with yan horocratile memory wint to Michael D accorns [Compasion: June 1960) for the meeting of a took detect? If is common invavings that the understand parts of social are fullyed down the other with the social ware tabled down the other with the social ware table the fact inno cycle. The socie ware non took wathing is locabed next to the inter office. On older models a loggest ancas of obvolvity arrings han has the simply accomment.

> Don Shealor Saoramento, Calif DO

## FORUM

In which the readers, existers, and of the editors. Letters for publication

I read your Ney 1980 magazine with Americans " After I read. Some of My Best

### A Far Cov

but the entire magazine. This is partic question are ac easily checked

In the April 1980 Continuum sector there is the statement that "even natio lower As stockinge thallow could approally

number of Cesanean sections but mased

government were holding back trut



pecture of the imperi left by a coerrist ray

NASA informs us that associate may indeed suffer from prolonged exposure Dean sharpnehad as cosmic rays shriking to Mary for expression the accuracitated such as the Apolio or shattle reveators,

### Astenoid Agnouture

in response to Rear O Learv's article "halamed Ameridany" (Search May 1980) inefficiencies of his world to the real of the

There are 4.5 (alter) human beings on Drivers of people -Ed

In the May 1980 Continuum you

as England and California with air tem

### And Jupiter Aligns with Maril

LAster (1940) why all the adverse manthematic Dignets won Locour with 1982 Nexture of

actually lunding a space project through

### Stracht for Meter

cations. April 1950] sbsolutely appalling

### The Trouble with Aliens

I m writing about Ben Boya s Last Word May 19801 is which Bes and the

lobby getting some popcorn when one of

amargad from poor Kane's chest and

Toeg to differ with Rawleigh Warner s larner

cheaper if not changed will be engraved

Charlos L. Mason

mectran in the March 1980 Garries column revision, trapezism, trapezoid capitate effect upon the experioned. Who says the

East Lansing, Mich DO



### EARTH By Don Wall

A few diead seals are not unusual hereifry to have died

before and John Prescott director of the

The seals were dying - and as of this

people is an epidemic, among animals, a



Hampetate and as far north as Saco immunity to the disease or eleo wait with

while shifted. While all monitoring looked for data to help them understand what they had been helpless to stop

the disease. We ballows that the biology is

Stranded sea memmals are not a new Soverticas na Scentrate are tred of de

and a cache of outling tools included

scientists to the beacting adea is a phenomenon in itself. An electronic web Phone calls are made to fire nearest Network, in Washington, D.C. the National

The experts race against decomposition one another To "work.up" meaningful data.

## CURING DECEPTION

LIFE

By Dr Bernard Doon

All Departure—The same motification of the source of the s

After caseful occessions the Lancer (caseful to publish the report, Lancering (htt openly decusary such desurption month later not a single letter that spperend in response to the address for suble details. This regime arms the life origine popol, continues and all the degrade popol, well with medical affects.

The Darielt physicians and suggester def not have exacted interfaces. They simply winded to learn the sub-social sector physicians and the sub-social sector and the neverol years. Wise it a bottom or another the fitting to exact any social fitting the original sector and the sub-social fitting the rest of study to exact an exact on unamitagement way to exten any social fitting that any way to exten exact any social phase of the social way to down participated and way and half be other.

At the outsal the overwards it human guinas pige certainty volumeted, they had heart about the operation and warread it backly The problemiliag in how to persuade half of them to became "controls. Here felsetood came in The doctors led leding them that preliminary tests had shown they should not undergo the clearitien.

There is, of course, inbuilt deception in the double-blind trails that are carried out to assists many new forms of medical involveet. Score nations are desire a scientizity active strug for example, while offees are given an nactive pricable Hommolous officulties can area in such a sampler, if there are entry indications that constituting alramatic an happaning. Brough in security advant? In the Canshi care an example and an example an example and an example and an example and an example an example and an example an example and an example and an example and an example an example an example and an example an example and an example and an example and an example an example and an example an example and an example and an example an example and an example and an example and an example and an example an example and an example and an example an example and an example

There experiment went ahead on hall basis which means this (6) persons were desized and the major and the second on the outparter was dismaps. There was considerably greater weight loss in the surgest persons B all complications able the personality events.

Buth information is undoubtedly valuable Thus when the Lancer and/or incomed a separt of the clinical estats, he laced a tillemma, to publish or not to publish. On that paint the Declaration of Helipsing, adopted by the Wold Health Organization (OHO) is quite clear.



Medical journals should reject any paper that appears to be effective uncound. The Lance's execution to accuse the report (scancely writicated by the total lack of critical reaction afterward) this went against WHO a decision

The question tackled by the Darish learn is one that conforts medical researchers and practificities world over how to assoss one therapy agains another medicably who allowing paterns to chooke and therapy influence the outcome.

Desines the time has now core to graph the neifer has now core to main time an extra lay surgery out main time an extra lay surgery out mains an intervention because of unmains and the surgery of untimated and the surgery of untimated and the surgery of the surgery people are more weight in Make make the people are more weight in Make make the measure and the superment upon terms weights and people and the surgery and the surgery persons — subtra to more the surgery and the

But no patients would have been deceased. Ethically these ocurities no depectors. And from a program to attancipant, no the would have had to fear the consequences when individually who had there part in the hall decovered as they well mgt. That hey were seriously misled in this deputations area selfenteres constructions with mither movest.

## MAKING A COLD CURE

### SPACE

By G Harry Shne

An office of the second second

And yet the most important products of space industry the ones that will mail affect our everystay lives, will probably be those most people today divertiosit, the loop of s and phymeioexteals.

As Cereir's executive action Ben Bove, nemarked in a recent First Word, "Science has existicated a killer cleakes jroth Earth smallpex fain tiths what science is supocired to be idente?

Yes it is Spence will control that work is spece because the weightlessness and high vacuum of orbit offer unique advantiogen for todes modeour Mechanias Ifrom spece are so traught with promae that in 100 years humanly may look back on the aary Space Age less as the eas in which we explored the scier system than all the time when both disease and death were conquered by specifieds working in or bong brokets

One non-warregly important field is cell biology Homore, netymes antibodies and other medically useful materials are manufactured by usingoof curves. But gating a long cell to growin vitro anther fanns viso percente rearmour difficult is fanns warrente because of this many possissis that thoreat celly could be carried out by cultured cells emain momentical

This may soon change Butechnologats believe that many of the things they parted do here on the ground can be accomplished in the weightlessmass of gases. This is particularly true for cell brokows.

Growing mammalian celht – uften the most useful – is especially difficult Mammalian cells like to attach themaelveri to something before they will do anything. even parry on their normal melabolism. Without a supporting surface, cells will ranely produce the valuable products benechnologistis seek. Catawing mammakan cells her thereit

required Elseverly dissigned culture tarios with many-taysricd mamberships but which the cells can altholi themselves Nultionite and other rew matcheds must then be pumped passible cells on these, membranes

The problem is that cells rarely affacti themselves to such mambrands in neat layers only one cell thick instead they pile alop one another the upper cells arrothering the ones benualfh.

One recent solution to this problem is the morphored is plastic sphere often liss, then a millionth of an inchini charater A single maximum cell can attach seel to each microbread and be quite happy and productive.

And yot this identif quite instead the problem. When the value attack the themsevere to the backs they shift to the backmonth many setting that. Colds on top and all he idead while these quite the backet which will be of the trunce the backet background in the of the trunce the backet background is the of the trunce the backet background is the other the obstrate of the background is the other the obstrate of the background is the other the obstrate of the me eventuality shifted by the pointed documulating undermeth.

The only why to keep this from hap pering is to stir the outure. But a whithing some can deal the tragle cells a death blow At best a bettered cell soles? cooperating with the brokechrologist

But in the weight lossnass of orthit the oaks and their microbeads carrier with two the bottom of the contained. Have in to bottom. Wathout gravity the colds will remain suspections there routure medium. Then they can be put to work making the formands, exceptions and other coldouture products meeting by the sock and humes back on Earth.

Weightieceness also permits the use of other bacengineering techniques that are difficult, and sometimes improvable, here entitle ground. One process, known as continuous/low-etectaphomeses, is a means of responsing maliculas from a community of the techniques.



Pharmaceutoast from human calls grown in zono gravity could soon save lives here on Earth

# SIX ANCIENT MACHINES. AND ONE NEW ONE.

The first six are the basic machines. The seventh is a silicon chip. Basic machines provide a mechanical advantage.

Silicon chips are different. They provide a mental advantage. Etched

with microscopic circuits, they're the heart of the modern computer.

We make the comparison because, today, mechanical advantage isn't enough. America's waning productivity won't be improved just by working harder.

We have to work smarter, and silicon chips will help.

Armed with computers, old factories can behave like younger ones. With better use of information, assembly lines can be made to work with the assemblers instead of against them.

Heavy industry, technology firms, service companies must all become more productive, a challenge that demands ideas.

And just as levers alone don't move rocks, computers don't have ideas. But they give us an advantage.

They help us find solutions in time to solve the problems. You can't get more basic than that. **TRM** 

### 

By Walli Leff

weats a prosthetic divece in place of her right arm. She is visitly underuficial by accely and is

since | graduated from college. Frances

Scrence has played an important role in

institutions and into society Quadriplegics are being designed with the handlong ped

Or Sifer's team worked on the premise



people's minds. The bahavioral difficulties between the two groups, Siller concluded

Siller states "is that we locate the issue of person, whereas it lies more in the person

to ight during an attitude experiment held place a hand-capped person in the officer

dubbed denial of seventy by Silior 6 team aids to downplay the handicap's effects

have broad applicability Bitualians his It is transferrational were calculated, reflect expression in a reaction of periotalized

people pictures the disabled as having Interment and tolerance. While this



### THE ARTS

By Jeff Rovin

tes column has reade the cont before but whit hagely untocused resontment. If we think of Hollywood as a greak and giving occult and every genera bay into which it was has there is no infel more polluted than scance shoon.

The problem faceably calculated toologies contraining this bight state there and any the animative memory labeled any who constrained in makes They are smply miguided augusts on the roton the animativement value explosion at other constrained by any state of the memory investigation (output) and the memory investigation able when one of nu adherents emerging able when one of nu adherents emerging able on encourse in a demogratic density who encourses integrating contrain one we way tops the university the paceage and the one of the state and the paceage and the one of the state and the paceage and the one of the adherent and the paceage and the one of the state and the paceage and the state of the state and the paceage and the state of the state and the state and the addition of the state of the state and the state and the state of the state and the state and the state of the state and the state and the state of the state and the state and the state of the state and the state and the state of the state and the state and the state of the state and the state and the state of the state and the state and the state of the state and the state and the state of the state and the state and the state of the state and the state and the state of the state and the state and the state of the state and the state and the state of the state and the state and the state of the state and the state and the state of the state and the state an

There are low figures in maintename interneting more respected then Kriel Dougits and he rightly deserves such respect. Dougits has dementive such supertrimotom petales as Chempson Are the Brown (1964), and Longy Are the Brown (1967), and the mas produced athers that nonder compensionable has condensitial and major stirts H as lensing, obtaining and administration of the second allowing tames in this sounder before gain in the most of a query regarding the learning tames in this sounder that shades to before a condension and asys with a leagh. There by your counterpart hereings there a condension through

Douglas has gover us a par of some form has the varial "has fait, datas" 3 is form has the varial "has fait, datas" 3 is ba h dydopono-meanorh folding on Time have ha outs's provinsious tartum introveng rubol mend Hactor to munace securica Dougles and Hamh hants tar na propercy hal is little more temporal, "wateries entoaned with ear gover and a stray function to Dougles to the other and the security of the data provide the transmission wateries and the part of the security of the data of the temporal, "wateries and be belief to data the other the more comparison wateries and the other the more comparison wateries and the other the more comparison wateries and the other the temporal means and the security of the other the security of the temporal means and the security of the other the security of the temporal means and the security of the other the security of the security of the other temporal tempora temporal temp



Kirk Douglas and Ros O Netl'in The Final Countdown The USS Newsz hits a Silve warp

withda, "Everyone jumps on the bandwagon, including myself."

There provides metal and a second sec

Though he trees to be reasoung about his physical individual affirming their fore of this characterization additional and the series theory of the and thus there is a soleritide theme of relatencing. The series boly to create further an eady with the glib posinetiti. "What is it is the "Hoff or screething?"

the first to concede that his functamental difficulty with science fution is a threefold descriftor with science.

The first stumbing block is his adheavies is the doprine that overhic which is barry worth the borther. "Sou cen't spend an hour typing to explain things," he declares Wear (The polare uptics to in """ min at point where it like to do what it like to do if the subjects dopsn't like it. The methat and control dop?

Be glad, perhaps, that he old not treast in Seturn 3, which was a box office ofsaster and tope that The Final Countdoen, which is his production fares botter

Secondly Dougles has title faith in expertine and leven all "When I noncluded 7he Weings in 1958," he recails "I had exectins standing as advises non the donativuotano if the alter and winked compaies designment all that ring." Add paced based on the standard and an add the second standard and an add the reservement of the wing after designed on a museum. Naw he treas comments owner (e)



## THE ARTS

By Stephen Demorest

I was during one of those floating particle New Maker (weithat) classovered you can bodieg history (i diandaet mithe path weight of an underwiser hung room, where our host played DU with this velocities and the particular bits of the Stational entering and the state of Stational Stational entering and the state of Stational Davide interesting in a stration physicing the physicing the state of through the provide one strations in a stration physicing the provide one strations in a stration physicing the provide one stration in a stration physicing the stration of the stration of through the provideo one stration of through the

Sony shot this in Tokyo to lead their equipment in the Badesis and then they threw it away. The video master gloated "Luckly someone tehed it out of the mast can."

The his to be the ukenetic collector in mediana, il exception, not only comparing notativate out to start any discrete the paid (mintray rink the galace) and events it will be controllector topos we were be paid (mintray rink the galace) and events it will be protectify was in tack. I learned autoacquartic is only flatter to the quark regar insource/linear of the volaurder galacet the comp of Anexanch's more singular -- and most possihable -- cubural documents have been preserved in private librarias of rara lootane

The history of acids software has always been a neckenism on Whom accounce interfand cavelogical the instantmes to interfand cavelogical the instantmes to instantmest and the software of the instantmest in easi the bacteriggins of therminones at 30m Max would find the 300 under the order entropeanous of pseudolical baces Store three well appealing to the store of higher dynamics the store of pseudolical higher dynamics the store of the store of the inderest commences the store of the

To there is the opproved, then their home video here copy in the time dide class. Today nearby 2 million machines be looking to there are operating in the United States. Perhaps somewhat believely Universitian of Wall States. Productions have year brought and agenet to avia and manufacture of the video copier and controlling ball laping them moves and controlling ball laping them moves the states. off prevailable services and violates copyright law The court clanaed the plannths, however truty that a consumer may use the machine in the privacy of the own hometo accord and watch whatever he wants wherever he wints (The decision wiry agentificably do not deal with the sale or throng of theps coulded the form.)

New you can searcher nick Mooy s. check. ou 25 wanym cholle togged an low as 2700-mobile togged and low as 2700-mobile to docart saves canado that panwy moves. TV sense consorts and reak concertain to totwen in 250 and 200 kast lair fibboard published 1610 and 200 kast lair fibboard published charged historic totages and the charged historic totages and time i Lief antiased as brand new mail oxise Valen Char

Nationally, there are to traverse to be mode infre software seeportakes and number are scheme being affect early doing of tage to the software seeportake and the software here to the software and the software number of the software software and the number of the software software and the number of the software software and the number of the software and the software wide interpolation and the software and the software software software the software software software software software to the software so

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Frank hansell is quarking more than 50



The Bastles on tokeward Booling tapes capture notifying and bring-t book play

hours of tape under "hold harmiess" agreements until he can clear the rights for dambulen. The mapofiles that the rights for dambulen The map files that the statuse to have playing it dool hoarding the cleared firsts in their catalogs until a boom market develops.

Loss cool, hough use the black marketeses who plandin count his as well as unalkased old favorites in logitimate circles, the average from a sold to pay VI about a year after do interal freehold relates. After another year it is down on free network interview. In all them a typerned cases the will be sold cometime offer that

Biochogens however usually flood the outrary with insolution a link truth this within to weak a diris theatrical debut and solutions they be not have a blackbauter on this there and no a solution of the link truth and the solution of biochodes in multi-time classifies and theatrical with all hadrenal releases. But hadres a solution of the angenet the class (a common who wethers to ship a black a common and bottem in the interfer 6 4 all and more the months (a more the more the interfer 6 4 all a the more the black and more the link and and more th

The FB appert in charge of invasilogations on the Weat Coast away on forearrants latele once a first in shown on poy TV. They set the point the window for anyoody to grade. So has invest concern a stepping provide damag the limited the atropia decate just about anyone can alread a part – a bio bedressar, is projectorist, a shipper- and make a victor matter in a few hours. The firm inductor of obtains a your the way.

John Lollos, whose two-year-old Video Tape Narwok has a hit with the Mr Bill Show Trom Securday Alight Live, admits that pracy is ecoding his bwaness. A guy parte in hare proce and fined to self me Gose with the Wind and Enrow Eddit belong to her Esaid Look aren't you alraid you'll be chught? But he pall laughed and seid. Where are you gon to look? "

The PIB has closed down sevenil professes (hushing inschlarits in noncroundspectimithe process), but the otherwise soluristed as a misdemeents with parabate has a misdemeents but parabate has a misdemeents but parabate has a misdemeent parabate has a misdemeen

Manufactures are not ideally right place Manufactures to approximate the manufactures of the manufactures of the manufactures of the manufactures of the they call caps punches which experimenting with signal is called and the manufactures of the call place of the manufactures of the manufactures of the damage of the signal and the manufactures of the



wares Weberts's Meter Bit Snow On nor Not another heights within of orders protein

Purrey in 1974 before becoming dialinchanted. "Who wants to see a close-up or Steven Stills siface for an hour?

Incode consolid rate intercented communits they again allocate retwork of independent opcimicalitants with no appetite for the legal singularity. The the logical mark single for the families who has away flutting Stands model cover. Frank confides, "Them are increasing film ago can take but fyou want them badly us assume somethings with thempaties."

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So the hant for hose more in-e-Meane tapes continues Planking particularly proud of teome did news floatage tables in New Cheans of Linnets of groat binks Basin Street imagorase. "It is no plank you could de from it," he guiltes, "and it's you outure it's part of America. Paul Revers elser doesn't hold is a condition 1." DO REPEATERS

# UFO UPDATE

By James Oberg

trange mandestations have a lowys apparend in the akina. Salucats was Donelm to MAT when Statio bioancesman Kenneth Art when Statio bioancesman Kenneth Antoid saw rate shoring akica fly paat his amat plane over Mount Baneter Washington

Notocly knows what it was fended save After three decides it will probably news be possible to reconstruct what actually happened on their day.

Annolis however, has furnished some orison training responses that has response value of his region. Since that shall agitting is cleans to his use and LPGs are noted in their including one incelence of the same place. Bur all his LPGs for the same handlower they have a become the best week and on adge. They also cleanses take holdmen in their centers.

Such descriptions are unique among the thousands of recorded UPD sightings. As psychologistis recognize, if the same rate matil estation contribute almost reobserved for one particular witness, that perception may be traced to some where characteristic, rootto any external or obviscate, rootf, stimulais



GPO Novers ovar Octanae, Davroanki netar a solavegic waterway that borsters a Soviet military 5656 32 OMM

UPO time "Indeal attempts by skipters such as the site as servicencer DF Donald Mercel to progose prose c-splaneters the Amad a setting-metch testicity test hesibilities the second setting test hesibilities the new contrast-met with tercesses desances from the UPO accesses desances from the UPO accessed units accesses met with test and the second setting accesses accessed units accesses of which test accesses the second set of appearance without providing a wolfert backlash from UPO enhances

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EPD buffs had bear hyping the U N afflew with bearing bios obscyptions of international speential, panels, of a 'new sepeciatality' for their or categorial-fained speciality and of high-healt have the west in hellucreasen. Dany surplanmed refersioned his-flagan. The United Masses, and Luma our new had the slaghthest interest in UFDs buffstd only been syng to be polie to one of its membrase.

Grenada meanwhie is dividing the factors and histaki of policing is meanwhile is dividing terms propies say 'hooled' a leonemy and of living deem the country angulation as UPO capital of the works. The new government has shown a dividing the presence of Caban adverses. The about on of pees freedoms, and vorsig with the Sowet block the linear Martens.

Suggestions are presurrably now being exiliarized for productive ways to dispose of several million postage stamps fasturing Gatry lecturing to the UIN about UPOs CO

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Well now as in no other tape in history

### The world in your parket.

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# CONTINUUM

### DEATH IN THE CASCADES

I was Sunday May 18: 1960 8:32 A.M. when the vace crackled own the racto. Vancouver! Vancouver! This is d! They was the last words heard from Dr. David Johnston

Intry vertexed, a godget with the U.S. Geotypei Sweet Pre-repet total where Jamma's constraints in indigating Coloniant in observation point the Mould ID, Henri Vector Tate Strolled with this filled at a Summary Indigate total. The screating the basis wave of unmarganeous laters. Sime of the moune were strong to Sime of it equations from the test of the network of the Sime of the schedule fromth in its with appending preterminal black Coloniant if all the regime wave guarts almost excepts a basis out out of all all the regime wave guarts almost excepts as basis out of the schedule fromth in the regime wave pretermination of the schedule fromth in the regime wave guarts almost excepts as basis out of difficulty of the regime wave guarts and the regime as basis out of difficulty of the regime wave guarts and the regime as basis out of difficulty of the regime wave guarts and the regime as basis out of difficulty of the regime wave guarts and the regime as basis out of difficulty of the regime wave guarts and the regime as basis out of difficulty of the regime wave guarts and the regime as basis out of difficulty of the regime wave guarts and the regime as basis out of the regime wave and the regime wave as a schedule and the regime as basis out of the regime wave as a schedule and the regime wave as a schedule

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Some paper potentiate the openant of theoring. They see him as a cold obsolutions of an an well-where here and a white facts cost making well-interval in the paper of the patient and recording weapons of mass destruction for his patience? The page recording weapons of mass destruction for his patience?

These possessed of these B-move perceptions —and other perceptions equally absurd — will not understand Johnston or his actions. They do not understand those who do scrence, and they don't understand acartor, theil

The essence of science less not in the performance of double blind tests or in the dissection of sanchem-blasted most or in the scebbling of complex mathematical formulas or blackboards for the edification of a classroom full of geduate audents.

The entence of science lies in asking guestions. What is a star? How does aliving cell work? Why does this volcano have a blue clow in its criter?

Johnstan level the question-asking game he asked the one about the blue glow Shortly after the Washington State volcano free excellent on Merch 27 he trad spatial an entre blue famet in Mount St. Helenais onsier Why a blue filmm? What osward it? Waa empthane? Suffur diseade? Was magne moving up lowerd the surface? The fame disappeared below Johnston oou'd per himself lowered into the canine to goal surroles.

Lateron he did go in and he grabbed samples of the bubbling water at the prater's bottom

Claiming?\*Roothandly? Jothmaton protostby duth I thank 60. He was a geological ascenthal He was cursos. He asked quastions Not many people get to do what they seely want to do in this world. but he do! He parentizations been quasid as saving the knew he d means and not. but he was done what he wantaid

He probably don't spend much me dressed in white lub cetts. One photo anown him with a site cap and pullower senter- bette suidd te soanstling along mountain slopel And these where he is hely be found not in a taboratory A hee yetter and advantions get targeted on Mount 51. Aquatith in Alaska gast before that one brew He got out with only hours to some

Phospike encogetates solve table as betached of the normalities that the Flamman section as a variety of making began bamba de batter mousetraps, will not understand with Hauman technicates to anyon the flamman section pool. Hauman technicates to anyon the flamman section pool Hauman technicates to anyon the flamman section pool Hauman technicates to anyon the flamman section approximation between sea and strateging the application we would do the north lace of Maumin Bi. Halams abong with the parking lot is now pomewhere with Montann.

Do Done Multimetry was Johnston's execute and one of these geologicals conditioning potentic studies of the velocities these delogicals conditioned geological Multimetry remarked Meen 6 blocks: I want to be an a certain node just north of the summit "builget agest velocities of the action from here. Buil doubt Illiget this chance. In the tot has dest these chays

Why ded Mullineaux - fifty-five, matried, with three children - wark to be at Goldwater II when St. Helens blew? And why ded wimster actually po?

Some people will not understand these statements. Pese acterns They may call heroes eight men kifed in a tragic accicent during a botched military rescue mission.

But they will not understand Dave Johnston -- JOEL DAWS

### CONTINUUM

### BLOW TO CREATION MYTH

New evidence for the class evidencery relationtrap based in humans and three other permate species a genetic et claving, puts scientific creationists in the awkward postion of being blagsheimers.

Dre Ekzabeth Bruce and Pranosco Ayala, of the University of California at Davis, studied 20 genetically controlled proteins in humans, goallas, semangel and two subspective exchanges and phones or angularis, and phones

Cur work indicates that humans interps goalias and cringulars are all about rocusity offlarent genetically says Dr Ayala. "That siggests the four species came from a common angester

Ayors claims his and Dr Bruce s work, tagether with other genetic invidence puts the so-called scientific creappriate in an unconfignable position. The creations is claim the Bible proves man did not apprig from earlier primate species and that explution is a fraud.

Applia says the DNA muclockdes are like letters in a book and that the 'books' of these specaes are all dontscal' except for maybe 1 or 2 percent.

Supporte you were given four tooks, and 00 persent of the paragraphs were iden toal inder for lefter You cannot conclude the books had been written independwritter

Bo these creatorists are implying God is a cheat making fisinge took identical when they are not Leonacian that to be blasphermous.

Beaktet barrig a genet ost. Ayala has a Ph D in heology from the University of Salamanca. Span

- 206i DBN

Given plenty of time, there are fear timits to what a technological society can

-Frantian Drase

#### KIDNEY STONE INHIBITOR

A procee cause of excruciality pantial locky scheat has elucidad the releventh efforts of scherifists for many seath. Novel all long test a loam at the University of Chusago has proported a unite substance seemingly tacking in people prove to develop attories.

The substance naturally occurs in most people's unne Buil anyone with a delearney of the poten can expect trauble. Stores can crystalike in putantly into the size of a pinhead or at worst into a single store as large es a waituri.

Five of every hundred Assinces are users formed Assinces who have passed stores can alter for eyes proces of alter and an another properties of elevations on due properties of elevations of due properties of elevations of due properties and elevations of properties and elevations of servation while strong parlifers are actioned and More stores spontaneously make them any through the unnary hard taking anyatives from them how to be three weeks but in about 27 percent of all cases some form of surgery is required o remove the stones Dr. Friedrick Cos. profes

sor of medicine and physicl-



Passing numerics stores is agony real? Now there s topo

ogy at the University of Dhrago Mechasi School and head of the research proup that reclated the inhibitor told Onny that the group is current goal is to synthesize if for eventual uso is a drug for the prevention and headment of scores

Meanining UP USD toocrimends lobusing the usual advace for warding off bases Sayimin because heavies people and to have mas salar here only deletablicating choose term tas track tess, been spreach and pappel and that some ward to lobusing other once the lobusing off the some way to lobusing with the some way to lobusing with the some way to lobusing with the some way to lobusing with



the six universit states and sur primate relatives of every closer shan we thought 'A study of DNR successful reconfirms evolution

### BEAMLESS LASER

A later doesn't have to bull a claim shaped later that



search Institute for Physics would entil laser light from its

Ichi which appears as a been (Some lasers emt. cation by stimulated email

liters were developed be-**Dr Horveih explains** The Malyutin and A Kilpio, of the

Although it so't in a beam applications for the new Inter such as owneralized shuction But its most immethale engand may be Jell Hech

Those unterested in perdefuiling prosent -Smoore de Beauvou

### NOISE HURTS SPEECH

seems devicus only after someone portisit que Many people in noisy areas have voice damage from living to

vealed for the first time thill voce users We found a lo

pinces - such as with also suggest spectrogra-



## CONTINUUM

### **GNASHING TEETH**



| adding that the repair job

### NASTINESS BY

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Developing and to "lower an



### NARWHAL MYSTERY

The role of the naminal's task, along booth that some tasks, along booth that some answer and task and an much as three maters in front of the Acctor marve mammal has used for fighting banging holes in the size eventhead, or asterio?

The Introduct according to McCill Liversity researcher Hearn Silvermen, is protectly goring. This recently saw main netwrotes going through a kink of goilaing action of the land Silvermen atoos on the offs of Bath to make long-innge observations and wrinder with the Inst Earn action who that it have had been to arming observations and wrinder with the Inst Earn action who hard it has inst Earn actions who hard it has inst Earn actions who hard it has inst Earn actions and actions up the the armst close up

Her observationa, coupled with her finding that many male nerwhele hove broken tuske and socars on their foces land her to believe a male nanehal-uses his tusks for lighting other makes during the meting seaton. Formales, which do not have tusks, have feater scars.

The francharine of y two best non of historic usually the left, as sub-enty lengths gating a bogon makes in may reventisally isochia integrithmat as long as the writing per about have to writing the about strate to writing the about the to the about the about to commumented a sposistic commumented a sposistic commution of the to the to writing the eventy.

Dr M J. Duebar, of McGat. who supervised Silverman's initial project says the nan-Mails not humad how except by the Inuit and its numbers are believed to be stable — Barbara Ford



The surveyal averages four lotter malors in length and its task is about hill at long its real purpose live lengty amongsed

### COLD NOSES

Why do dogs have cold, with roses? Because a cold have a - conditions the brain says a California tocentral Face 20 trreat that of the tongue, because of inthcately folded nasal bones not in blood verticels Doclar blood from the

L.

Humans use facual away to cool off their branc but the dog and ats the and of its famous cost, wet nose to an consisten the need.

This is special heat onchanger, claims Mary Arn. Baker, a physiologist atthe University of California gt Peterside, who has worked out some of the details of how a cathere note in opm brattion with sapid parting actis the dog to blood by two to Thise diagness before it reaches them fasse

Vigoous everose can boost internal body temperature as high as 107°F But the brain must stay much obcier or size the dog will become woczy or be permanently even tastily injured

And while the dog s parking might seen the principal means of keeping the animal tool says Baket, the new is actually far more important it has a total evaporative sursumounding printipe loading to the dog share. To in crease the cooling effect, the dog secretes mucus which keeps ta nose wet When the dog pants, air moves schese its nose 20 smas faalse than is it rormal, which increases blood flow to the nose

Infrumans, facual sweat pools the blood their draine from the face into a reservior at the bottom of the brain. This oppler blood bathes the antery carrying blood to the brain — Africa Blakeske

"Drenything that looks to the Solare allevates human nature for Mess never so low or zo Mile as when occupied with the present

### CONTINUUM

### MORE OUARTS TO THE MILE



and Melver J. Aradismon size

-Martel Proced

### SCIENTISTS AND

world of science it a Bigfoot



### WIND FARM

In earlier times the Gootnoc Hills of eastern Waahington State wete full of windmills as the people of this area near the Columbia Piver goings used windpower to an the States. Their come the runti electification programs of the 1600c and the subsequent defines of those windmills.

Now they so back, and they so bag. The biscong thin gineering and Construction Company with the locatest Department of Energy. DOGE 1 MAR and the Bonmental Bower Actimisations wind term at Goocinca wind term at Goocinca their tree rugs and the field intererugs and the period watch the period watch the score and subject the score and subject the score and subject to the score of the s

Even Don Ouwate would



The Boeing what generator (in reflects of randoms rater

think hace about lacking these windmiks lowers for material tait twe-bladed rotate 30 michaes in charakter a total weight of 778 mittee fores a total cost of 54 8 mition for the test unit a presmit power cost of 10-cents per kiloweit hour and an ownhaal good of about 4 cents per kiloweit hour with 7 500 kiloweits per token.

The BPR will pipe the wind-generated electricity into its Pache Northwest power grief and Boeing power grief and Boeing power size if and Boeing power size if and Boeing power size is and COE frees the Goodhoo Hite Mastakty of commercially generated wind power

High new the DOL has other wind generators — all test models — sunsing in New Views to harsh Calestee One Paanto Pico and Picode Island However the Boeing generators in Robel the works boggest and eitig incluse the most power — J D

Expension is not what appens to your it is what ou do with what happens o your - Alchust Huster

- ARCOUS MURBY

### DEADLY INGREDIENT

A decade ago cartan oly homicals called PCBs were intuelly unknown outside the toducts in which they were sed in transformers as an insulating Bud, in clashwass, ist fluorescent lighte, and yoomics as an electionty poortics, in panilo as a iffeese inder But PCBs (polychicrnate biphanyls) are annoty the most persistent and longleating of all polyumits. Decharges into wearways from factores and seepage from durings have enabled PCBs to onter the food phan and invade the first-of living creatives throughout the Incodend Drug Administration lead year theseoly in clubed Its aboveble limits of Politics in tiss and pocisy which often eat lish more this of the eat lish more workf outlease enormous amounts of which shi yellow perchi and other species ought in Wespersh and oth



PLBs have caused reproductive fanker, ophanny and book in mammals. And they are extravelen — even in Ducretoect force

world. Studiest here determened that more than 90 percent of Americans here some PD3 in their bodies. If has contaminated beass with to a greater degree than any other chemical inclusiing (DDT is coupin.

Experiments have dooumented POB caused reproductive Islate: deformity sockness and death in mammals range from mose from wonder how forg it will be before it effects in humakes we haved

Spunkt by environmental groups and by new avolance of their losic effects the U.S. er Michael states and would reduce the costade stripted basic catch in New Yak, The F2A code hes Data Stapital, penching a basic stapital, penching a basic stapital, penching a basic stapital, penching a Maarwahisi the lagnov orthings Laster states and orthings Laster states and orthings cost and stripting the scatter of penching lead in 17 a point of penching lead in 17 a point of penching – 5 a bonist of penching – 5 a

If the exercise doesn't start with a series of mystery the doesn't start

## CONTINUUM

### DRUNK WEEDS

Parhaps confirming the old saw that kguor leads to pregnarely scientists have succeeded in defing weeks Maryrand laboratores Today conventional methods must be applied avery year. Taylorson noted But the alcohol leastmant, is needed only once for years



Lx322 Back-pills pregnancy: A researcher reports wends whold exercises of a bean alcoholically induced

#### to germinate by feecling them alcohol

The opperments conducted by the Department of Approxiture, may have farreacting effects. Scrinked or seal a month of so before the growing season, the electhol forcies millione of weaks to special. The weaks can than be arenoved othermeally or mechanisally lealing the soft two for the food onco

An acre of soft hes up to 100 million week aweeks Each year weeks sprout while a copy is growing escuency yeaks. The bisacity cititat we get the weeks to getminate before the growing object the weeks to getminate before the growing object the weeks to get the weeks of the space of the special partment in a Belteville of protection he read. And the generation is 100 percent for one-weeds. He beleves such benefits satify the alcohol is much higher infail cost—\$60 an acte compared to perfere \$15 to compared to perfere \$15 to

The spray used in the experiments so far is a 8 percent ethyl electrol solu tan — about the same conconstation as in beer While such methods were used in the 1930s to produce the biosognis for sprang Rower shows the application to wear to a some offic new

It to yet unclear eity al cohol causes germination but the process centers an alcohol s anesthetic qual rees, not ta insbrating qual ress. Textoroon said — S D

#### DRUG PUMP

Many drugs are motiledlikence when they are blead interem. The standard way of doing this is through intervenous nitizeno commonly called an IV Bid this letquiris putting the patient in the hospital and hooking him or her up to the staal as ownibly of tubes and bottles.

Note there is a new way way way is a long pamp that can be implicated in the human loopy Shaged like a hockey body Shaged like a hockey body and made of barrow in the pamp cannel might can be an interface can be an interface can be an interface can be an interface and the pamp can be interface can be an interface interface and the pamp can be interface can be an interface int Dr Peny J Blacksheat one of the pump s developens and a research fellow at Mesearchuetts Denoral Hospital in Boston seys We have now implemented about twerty pump6 Borne of them have been in place formee than two yeers and the reachts have been encourageno

Unlike pills of an injection, the pump provides a steady have of the drug to the body avoiding lapses in drug concernisions in the blood

Implianted drug definery systems are already being used to treat center forms of center A spacetime of wersion of the party batt awer bat implanted into the skult and connected with a werdardie of the bate

Dr Blacksheer foresees many uses including the administration of insulin to diabetics and doparmie to treat Parlaneon s diversitia - Jarle Brousto



In play table drug-delivery system. (Ariske pells or an injection for topkey pupil-attra oump deliver's a stoady flow to the palent

From Space Age pulpits, they gather souls for Josus and power for themselves

# AIRWAVE APOSTLES

BY TIMOTHY B/8

and in the subscheme festnesses of Tidewater Virginia the Revenend 'Pat' Hobertson presides over a Space Age mecha empire duveted to the Word of God. The \$20 million headquarters of his Christen Broadcasting Network (CBR) represents the very latest in broadcast technology A hage dish obsped antenns on CDMs grounds relayed 17 hours of programs each work to 200 TV starking, 150 racko stations, and more them 1,500 cable 20 D1 Valakaria, 120 ratio obstyter, and merer hinn 1,020 online system historystudi the United Others. Through Twie micrarity of lastified communications, CBN draws some 73/X00 mere autocolines in this the Idea energl dys highly draws and the posterial involved energl dys highly draws and the posterial involved in United Communications on hard before south "The Local". Report non way, Thesi generation is deviced and their the United Through The Idea (Hardison and Table high meres communication). In the other is deviced and their high meres communication and the other theory. help carry the pospel message to all people everywhere. Whet a boundaries of the provident of the people of the p Yele-trained lawyer, is the most sophistested and influential member of a new feet-neetig power group in the heartlands of American religion; electronic evangelists. These modia ministers in three-direce suits saturate the enwayes with allocky pediagod parcels of the Good Word. They neach more than 100 million people each week, far more then ever altend church, and their influence is spreading Atender and a control of the and an an an angle of the an one a week and new TV stations for the discussion a month Takwasan has become the most powerful tool of religion. Exangelist Billy Graham notes, "Using today's mass communications,

PAINTING BY SALVADOR DAL



we can preach to more people in one day than the Apostle Poul reached in a lifetime. I imagine that if Paul could loak down here, he would be champing at the bit. How he would like to be on television!"

W mmitry has also become a 31 billion bornece livels operatives are using the economics address filling mass with the 800 million in Vitera to aspect that have 800 million in Vitera to aspect that have liven They solid conditions on the as cellal isor they solid conditions on the as cellal economic of the solidicated the solid mass and policial company. The memory of the soliterical policy has caused may in general them in the theorem is being any economic of the solid them and the policial company. The memory of the policial company. The memory of the policial company. The theorem is policial to the theorem is the infected by located how much broadil.

The programs affered by electronic ovargends suggest a debt to the shoemenship of Johnny Canson and Ed Sullvan. While most of the TV preachers mail logarist the ungody inflamena of the refworks, they programs are made to look as with the shoether difference as developed.

Heterinari 700 Cub, for instrume, is a percensati instrume of the Shrupe Thomas BC microsi alla and varies an experimental percensati instrumenta percensati instrumenta and an experimental an experimental and an experimental an

Robertson makes no patense about the wry he puts his show together. He notes that we live in a television age where audiences have short attention spans. Tils best, he rays, to keep the message as simple and deter ta conserve to nearch them.

Lockarp sheat to the name advant to the Reversor events asserting the sector of the sector of the sector of the vide in a detrative to regular method (and any sector of the sector of the regular sector of the sector of the regular sector of the detration of the sector of the regular sector of the sector of the sector of the regular sector as the regular sector of the regular sector as the regular sector of the regular sector of the regular sector as the regular sector of the regular sector of the regular sector as the regular sector as the regular sector of regular sector regular sector of regular sector of regular sector

The Beverend Jerry Falweif's cheattering

a bit more modest. He massly hopes to use his Old Time Gospel Hour to make God the primicy mover in American politics and government.

If it is new mechanisms to be being of has well's Bundly sermins it Thomas Road Bapter Druch in Lanchburg Wagns. The Exhibit of the service in a control booth parched high shore the compress to it is a set interval of electrone water to the set of the set of the sublader searching into different the multidate searching into the parks balow in the gantic programmers and dates within sopeal of the few minutes balow aritims takno with the commers parks balow aritims takno with the commers press.

For all its fectivical representations rough this control rooms unusual than this of the shifl slowe informally – the stimosphere of asset and cause proferity – that characterizes must high-tech setups. The workers are young, extread and impecubly desired. They go shout there

These ministers leal the same pressures any performer fools. They are only as good as their last show. If they don't come up with the best act, they leave to the competition.

tasks with the orthogoom of students.

As at the news, be decide draw the creatiogsthet project "decide the carries, people, the production creat Lat us pray that all agreecide of the theory will not security" for attrists as shadowy magas Biolar from the monther access. Tablet: biest each true of as and blass what goes and on the abadeat to mitlene of people them phase biointeracy access to write our biest each true of as and blass what goes and on the abadeat to mitlene of people them phase biointeracy access to write with write the biointeracy of the them the monther of biasecond.

These increases that Constants fundamental tables which access as a resident to progress abacktain against function for the resonance of the servery. Cond-Renness, taphfly kall load gars, is non-using programs to child, TV to agreed the Wood No doubt an entities generation of Nuclearentations and have opposed to Indefanetations and the opposed to Indefanetations and the opposed to Indefanetations and an entities an introduces world.

But if the media ministers need to prove God is on their side, Falwell's career would make an excellent example. To his followers the story smadks of dwine intervetion. In 1956 Falwell Sounded Thomas Road Based Church with 33 menteer. He started a radio program, then is an works, and the started program, then is an work of the started based of the started started church has 16,000 mentees. Instance the started based of the started started message across America with "I Love message across America with "I Love possible at the started based and message across America with "I Love possible at the started based ba

There sitting by your tolevision. God toxia you, "Fawaii tells his auctiance, in a tamilar bathone vicios." and so box your heads, Bell Him Tim a prinee and pray for ma. A abody amable man in the tale tohos with a beatming, owal face, Falwell maintains the cratoscal style of Maryoe Gentres in around meants of the opdor

We must al study the Bbla and loan to behave in Godt, the cress out, it is hencid all ageng this words. A choraix of anterna entering the content of the the words assergent to hight back agenrat the monaic disaget benchmark and the wordshees of these produces and the wordshees of Westington politicients to cope with the Westington politicients to cope with the Mentington politicients to cope with the Mentington politicients.

They many of you read the Bible and table of carried "in the weak sharing owner back of carried" in the weak sharing owner community as any approximation of the back in the weak shares and the same approximation of the back in the community as any approximation of the back of the community of the back in the weak shares and of the same many." In contrast, the back are backed in this event of the back weak and the same manufacture of the back of the backed of the same many of the back of the community of the back of the back of the distribution of the back of the back of the backed of the back of the back of the back of the backed of the back of the back of the back of the backed of the back of the back of the back of the backed of the back of the back of the back of the backed of the back of the back of the back of the backed of the back of the back of the back of the backed of the back of the back of the back of the backed of the back of the back of the back of the backed of the back of the back of the back of the backed of the back of the backed of the back of the back of the back of the back of the backed of the back of the back of the back of the back of the backed of the back of the back of the back of the back of the backed of the back of the back of the back of the back of the backed of the back of the back of the back of the back of the backed of the back of the backed of the back of the backed of the back of the b

More and more electronic ministra like Takkel are entrolling interevelve in controversy by using their pulpits to sturtin parbent of right-wing cautes. This have alnauch network calls the two starts and the hard to counter the gay rights movement, high to built cause. They have also bestaved their answer benefactor on many commentative coefficial candidate.

And this is only the beginning. Under the berner of Christianity, anwave apostles have begun a crusade to forge their contifuencies into an army mobilized adant to the liberal cosifion on every issue

The religious establishment has been addressed in the several methods with a table of the several methods with a several value exempliant for birling tables and the several several methods tables and the methods of the several metry of the methods of the several several several tables and the several with methods in traditions. If the several several several tables are the several several several tables and the several several several tables and the several several several several tables and several several several tables and several se

Castany's to everyphilis' recession both improves why policies is machine a lunge and descelose subsorbio. A monitor is in the origing policit in excession and the subsort of the sacchine public intervent in 154 persent of the sacchine public intervent in 154 persent of the sacchine public intervent in 154 persent of the sacchine public intervent in 154 perdential interventions. Mark his finders in 154 Reportson are strapping in to 164 that valid reportson are strapping and to the reg for potential intervential conditions of the intervention of an interventiane potentian on the intervention of an interventiane potentian on the intervention.

The influence of airwave apostles on their followers pointical ben in remains largely uncessed, built their can be no double of heir power own in pointies single of their in adherents. The most popular statist of toostocket mension budges of thostocenter indexistent in the single of the statistical event the national budges of thostocenter historical power in the single of the Hostocket and the single of the Hostocket and the single and the bibliotical right and the bibliotic of the HTL (Please the Lott) helveds-mean an elemented at Site million extravely.

Their kingdoms on Earth are built upon the humble compared the flock. They fill every program with appeared to dombors, along with commencies picking ther work. The hoty head on is in recently, they were for them bathy in business. but many skeptice see them as course profileers.

These represents to therebyone performant identifies the second second second performant identifies the second second second registrates. Second second second second second registrates. Second secon

This drive in church lod to Schuller's popular Hour of Power TV show, which in turn provided the base for his intervaliblia \$15 million Space Age Crystal Cathedral designed by architect Philip Jahnson, which opened this spring.

High-goward marketing techniques and sopheticated business technology and used to generate TV titles. Professional direct-mail techniques, fund-roleing coursolors, and high-speed computers help rake in the contributions. Some electronic ovarigeists of left heir address lists to other exemplists—for a price. Pacent suuse of Religious Assactasition magazine, for instance, advertised is donor bank service that can thelp youlleed the sheep and name the function.

Every once in a white an everyagelist gets coupling with hand in the oxidection bescardinary law hand in the oxidection bescardinary as a recently escontruction to the workshow. Originary and the workshow of human and the oxidection of human and the oxidection of the oxidection of human and the oxidection of human and the oxidection of the oxidection of the book Gale for human frame fields on the book Gale for human frame fields on the book Gale for human frame fields on the oxide Gale for human fields on the oxide Gale for human fields on the oxide Gale fields on the oxide field on the oxide Gale field on the oxide Gale fields on the oxide Gale field on the oxide field on the oxide Gale field on the oxide field on the oxide Gale field on the oxide field on the oxide Gale field on the oxide field on the oxide Gale field on the oxide field on the oxide Gale field on the oxide field on the thousands of dollars in contributions for nonprofit work into his own pocket

These lends of soundate town led to the creation of the watchfolg, Swingshoat Cound for Prismal Accountishify based in Psystem, California Ta outsician, howway the organis cash low rito the electronic churding prants in one guantilata words, "ins thecken is the Dwad Sea. Senda," and one internal Revenue Bowloo declosure laws do not apply to religious operanduces.

When does all this increay go? Beacles subsidiaring their ministnes, electronic evergelesis turn their this and the grandbase projects public monuments to their power Twy build hospitals (ICM) Roberts(ICM) should be monissed (PAI Roberts) construct media empires (PAI Roberts) harnbard and Robert Schuller). They acts forme downed is

OTH'S 90 PROOF GIN



Space research is giving the Soviets startling new power over earthly affairs

# **UNIVERSE** RED

BY CRAIG COVAULT

We fire being keptingschritt, you and Land the rest of the American public, of mattees an vigit to un nation to socialpanetal — and the influence of the MX matches of the balance of power in the Persain Guil it and failbackal, ris public that the news model in failbackal, ris public recomme and hard and in prost neorable and influence of power in the economic and functional importance of averopsics alcothau growthe

When did you last doe anything on Intervision deeling with Soviet apace (Saatta?? Autom to be short need terms whon the USSR learnship as and general-referent line response and general-referent mag terms mang cover Soviet space activities, when they do, the stores are often filled with here do, the stores are often filled with more threat holds and the often threat screenia breached pact Soviet space programs that aren it dowspace) million y

Interist implate, and a bad one hor systematic and increasingly accessful RAD work is beginning to work our distribution and intelligence community information clowly filtering though the Soviet Lincon's tangled documby not shown that the Russame are moving aggreeokely into spoontimese afforts are part of the USSRTe

PHOTOGRAPHS BY JACOUES TIZIOU

### global military and political strategy

In many weys the Soviet space programs should in mystery Over the past two or three years the Soviet Usen has subscribed severit mysters we derif paise understand. They append to be umanned tests of max-created systems. The more interstant, and obscribed an extra the testered in behavior, more interry. These SI, 9 Poton rocks are comparative to the U.S. Than 3 or he shown fills before the usi Applo program.

In one type of mission, the Proton it's two payloads that remain in oppositor and young of two offs to below muturing to Earth, where both dejects are recovered. The Society bave Society for 1978, and 1979. The oph clear is and the interrupt mission once used in 1976. 1978, and 1979, in redin Case, lance it was timed so that recovery could take place of dawn in the incovery area

Map questions remain about such missions. What were the dual payleads? Why were this or heavy as to require the largest operational Soviet booter? What mission required two spacecraft on the same booter? Why were the payloads kept aloft for only one or two pollon? Why many heavy at

![](_page_29_Picture_0.jpeg)

![](_page_29_Picture_1.jpeg)

dawn? These flights are among free most princiato ol the LISSR's space ecomas

Another innovative mession used a Proton booster to place a large spacecraft in to change its crisit several since. Part of it then separated from the main withdie, reremaining portion was maneuvered . A new Soviet killer-satelike system now friough more orbital changes, then even entry over the Pacific Ocean It was clear the Sowets preferred that is debrighted accidentally return over land Intelligence. Western space missions analysis indicates that the unmanned reentry module mote have been tro enough to carry a cow The secrect left in orbit was smaller than a Selvat speop station. still large enough to serve as a small station-or piece of a larger one

Those statter encoderator fields, marks. ing large, expensive space systems, parallef our upmanned tests with Saturn 18 page Apollo program. They add up to some sort of new Speet managed space papability of under a TU 95 Rear bomber for aimp-

It is tar more than a few unexplained forfits that women our scalor experts and defense planners however Arrong other

· Writely at the data sent from Sovert Amendian analysis from interpreting them Sever Sever bearter Ming off at Travelan deft. In the past, transmost from manned is a couplement water of Work succe-

### Are the Bussians trying to conceal militane

. During the last three years the Russians filter learned to accommodate humans in space for long periods. This new ability furnishes the USSR military and give powers that are beginning to trouble both the

threatens several of our low-allitude large-scale development work in this area. rearro major wornes about the safety of

. We have recently discovered that the USSR is developing a manned, singed, have nowhere near the capacity of our space shuttle, but it will save the Russears much more flexible

The Soviet vehicle was first spen in 1978. Soviet flight-test facility it had been carried shuttle orbiter and a Boeing 747

the 2.800-lalogram payload of our space shuttle. It would be substantially smaller, with a capacity more like the Air Porce

Boarg X-20 Dyna Soar canceled nearly 20 years ago by the Defense Department Dyna-Soar would have been a winged goadcosth launched on an extendiable fans boorger II could have been used as an orbaing strategic bomber or space stetion resupping wehcle.

To recurptly replace assister's would be one way in which the new Soviet vehicle could be especially useful. The Salvat B masses abare is turnises how much the Salvat B masses out at seven costs and hardware. Through which is the salvat B of the Salvat B way would be a salvat B of the Salvat B way have the salvat B of Salvat B way and the new streams Threat is to if there would be annihiltion-doing moved for us.

The Reparts are expected to auchomender measure in their struct bottom (1985 Early Rights w) prototicity use on expendiable two-rener micilia commissional versional find). Cirrly the spacecraft will be expected as the structure of the majorer or car space shuttle US recommassance speciation have find a lange over contexput conditional and any even contexput conditional have find and even to the second have find and context will make a possible to recover the Second the state has the schemack Space Context will make a possible to recover the Second to the schemack to be based to face.

The second stage of the new Soviet prapot will be an even more chamatic advance Instead of using an expendiable boostrar to send the appearant into orbit. The launch vehicle could alter be recoverable. The roat advanced concept would have the bootser fly back to the bauch hele for an appliane-off-kilending while the papacent's contanued on into whit. NRSA considered a similar bootser for its space shuffs but repaced it because of the cost and techcological chailences it reserved.

Developing a flyback booter would requare an exhaption any effort, it would strain even the United States Whother the Rasens could put one nilo operation before the var 2000 is an open causitor.

The lower overall technology of Sowet gace systems has be years forced the Fussion to Barych mark more missions that the United States in order to data in the same tetum expectally with mitilary type sams feature astiverg deparity in fight activity between the United States and the Sowet Union is ansator for concern

The agranting launch facilities at Peenda, acid solven of yakowi 1000 Likewise north of Matexa, and few losses second basing information besits second basing information the LOBE launched 87 space masorifiltion Resetur-carrying 104 comines During the same peerod her united Second Based and the most based has globes aurched in most based has globes aurched in most based has the above the status communities the above the status communities based proteins might acoult yi O the 37 Peersins messions of ween balan or interfadevoted to military projects. The U.S. program included 5 military fights and 11 dW missions, two of which were commercial satisfies in general, the fight ratio frave remained about the same trirughout the 1970s and into its were

The USPI use unmarked space masons for photo gooverseeiner, coemsurveillance, newgation, electronic mailgence gattaming, easily discont of meales communications meteorology, and their parposas, whitaki at an docotool and the parposas and the

For the most part U.B. and Bowl paces organize air more production with the time artifle directions. One determines for the sector directions. One determines the sector direction of the sector direction of the life of the Russiane files of the sector direction one storemet or tess, a read largel region determines and largel region. The sector direction of the application of distant Physics, these mesons cault not here there is ucreated that application of distant Physics. The mesons cault not here there is ucreated that application of distant Physics. The mesons cault not here there is ucreated that application of distant Physics. The mesons cault not here there is ucreated that application of the physics of the sector distant Physics and the sector distant Physics. The mesons cault not here there is ucreated the tables and with several methods of allocitics. The lower Advantage of the out-

To make sure Sowet A Sat weapons

![](_page_30_Picture_12.jpeg)

don't get too fair shead of our own, we have begun a \$300 million to \$500 million attort to develop an operational antisatellite watpon - and other spacecraft protective systems-by the early 1980s. We are put tests are periodened in 1982. We are place working on ground based lasers as an ad-

To date, the Soviet system has intercepted targets at abruches up to about moonant howiver and they ower U.S.

Leiber in geosyschonerus prist 35 888 kiomeners high They will have to sanka targets in stationary orbit before being conbe important in this alternot and in adaptisude orbits, where U.S. Nevstar navigation satalites operate

In operation, the Soviet A Sat would satgot the way a shotgun blast doen. No Soviet species of has ever actually killed 124 intended saget, but they have been eaploded after leaving the target several Russiane often use the same target to mans then one test

tween January 1972 and February 1976 indication that Soviet engineers had perfected a cuick reactor system to attack

With they with killer-patality tast thu made by a jet fighter against a higher terait The killer satelite is aunched into an offst below the puerry a free almost imdistance! The Nill occurs within one Earth 10001100

This extremely quick launch-and-inter cept capability could enable the Russians

# "I never knew gold rum ike th

![](_page_31_Picture_8.jpeg)

It's because y tasted gold ru

That's the reaction that's made today it's the smooth alternative to five contunes. Their specialized burboes biends Conadtans...

Make sure the run is Poerto Rican. The people of Puerto Rico have been making rum for almost skills and deducation result in a runn of exceptional taste and punty.

No wonder over 85% of the run from Payerto Bloo

![](_page_31_Picture_15.jpeg)

Romers LightRome of Puerto Room recipes well Puerto Roam Runs Deal DM-4 1250 Avenue of the American IVY INY 1009 (1979 Commonwealth of Puerto Room

![](_page_32_Picture_0.jpeg)

Her destructive . powers were incalculable, and she anioved using them

![](_page_32_Picture_2.jpeg)

### BY STEPHEN KING

ring their college ars. Andy McGee perment awohang the Alberry' Aslacinopen Lot Sx The subshance give the couple par powers They only offid a late Charke probably did, too with a powerful and barrely con- Mayo was opening the trunk of include talent to coste Area by the Ford and making his inusing her mind in Assemblies spection of the spare time installment Andy and his Knowlee started walland up devattor were ranting from the soll shoulder of the road. secret orgenizeeon, the Shap marchs The Short wants Cherhe alve And her father doad The Explore Nee New York Knowles and John Mann Andy

ment is closing in Following is

Just beyond the Slumber-

McGee were standing on the soft shoulder of Route 40 To

Mayo had and had a flat fre.

"I don't know" he said

"I think we're well ahead of frem," he sed "Don't warry They're probably still looking pertopated in an ex- for the cabilitiver who took us to But he was whisting past

He would not be able to look and Charlie were standing ting lowerd the man and kille are tracked by hepagents, Ray The truck pulled over, and a curry weating bib overalls and a New York Mets baseball cap "Well, there's a purty little

"What's your name mass/?" Roberte," Charlie said

Well, Bobbi, where you headed this moning?' the

"We're on our way to Verthey note and back over the mont." Andy and "St Johnshill, Ray Knowles and John bury My who was visiting her sister, and she ran into a little problem 1

'Did she row?' the farmer seid, and said no more, but "Like t keet Iteel pervice and an Andy shrewdly from

PAINTING BY GEORGE SMITH

![](_page_32_Picture_12.jpeg)

the writikled comers of his small eves

vide smile. "This one's got a new brother One torthe one fair processo."

"His name is Andy. Charlie said "lant"

"I think it is a conker," the farmer said. "You hop on in here, and I II get you ten miles closer to St. Johnsbury, anyhow."

They got in, and the term truck ratios and numbled back onto the node headed into the bright moming workight. At the same time Rby Knowled was beeating the full. Ho caw an entrol highway loading upon to the Sambettinia Model Beyond the motal the awk the fath truck that had pessed their car a few menutes ago just deceptoring from view.

Ha saw no need to huny

The farmer's name was Manders— inv Manders— and he had just taken a load of perrolers into lown

"You won't like me manding your beaswar inv tod Andy- but you and your but too here shouldn't be furnishin. Lord no Not with the sort of people you find ramming the radia. Intesid days Thereis a Grayhound Remmail in the drugstoe back beastern (Den Tradit Johnson and

Well- 'Andy said He was nonplussed

"Daddy is out of work, she said brightly That is why my momenty had to go and staty with Aurole Emito have the bally Aurole Emito dopen 1 like Daddy So we stayed at home But now we as going to see Mommy.

That e sort of private stuff Bobli. Andy and, sounding uncomfortable. There were a thousand holes in Charles story.

"Don typu say another word, Irv said 1 know about trouble in families. It can get party bitter at ames. And 1 know about being hard up. It and i is phame.

Andy cleaned his throat but said nothing He could think of nothing to say They rode in elerge for a while

"Say why den't you two ceme home and take lunch with me and the wife?" It's asked subtlenty

"Oh no we could'n't do-

We'd be happy to Charke said

He knew that Charle's intuitions were usually good ones and he was too mentally and physically worn down to go apartal he now

If you so sure there's enough," he said Rivers enough, "in said linely shring the tarm thus into their gear. They were ratiling between autume-bright trees maples eline, popters. Glad to here you."

That is you very much, i unanie sald

where too when she gets a look at you "

Andy subbed his temples. Beneath the kropets of his left hand was are of Brasis patchas of skin where the nerves seemed to have died. He don't feel good about this.

Pour Parenter to Septen King Depended © 1852 be Deplet for National by anargement with Elling Press somehow. The leeking that they were clast ang in was abili very much with term

The woman who had checked Andy out of the Stumberland Motel not twenty manulas and was patition became

Youre oute this was the same man?" Knowles was saying for the third time.

"Nos, that was him," she said again "But there was no little girl with him "Honest matter

The other man came back in and with ever mounting alarm. Lena: Durningham size that he had arwake-talke more hand and a gener big pistol in the other.

It was then," Ways declared the was almost hysterical with singler and chappointmust. No poople sign in that bed Blond hans on one pilow black on the other Goodkims that list two-Coolderin a all to hell Camp towers hanging on the root in the batthornir Fucing showers still depand View masked them by maybe bet mature. Red

Andy rubbed his temples Beneath his fingers was one of those patches of skin where the nerves seemed to have died. The feeling that they were closing or was very much with barn.

Mays permed the pistol back into its shoulder holizer Ray took John's arm and led him outside John was still sweeting about the fait. Forget the tread of Did you lafe to 0 J back in town?

I talked to term and he talked to Norwile Norwile's on his way from Alberry and he to got Al Stendardz with term. He landed not for meuters app

Well theirs good jursen think arminute Jahreny They must have been histong. I d ber you this year's salary that they were standing there by the ade of the load with their thumbs out while I was walking up that hill.

"If it hadn't been for that fiel- John's eyes were materiable behind his with framed glasses

Fuck the flaff Ray said. What passed will allow the flaff and what no see for the flat what no see flus?"

John thought about it as he hooked the welkes take back on his belt. Farm huck he and

That is what I remember too." Ray sard Pretty sckety track it they don't turn of the main fead, we ought to be able to catch up to them

Let r go then," John said. "We can keep

in touch with Al and Norville by way of Q J on the walkin-talking."

They total back to the cer and get in A moment back the sun field toxide out of the parking list, spewing out while crusted gravel from beneath its rear times. Lens Cursingham walched them go with a sigh of roller Running a motel was certainly not what if compared had been

As the Facil with Ray knowles behind the wheel and John Mayo indra strongen was named, down Roule 40 at baffer than one command of the state and a strongen the sematase of the or eleven manifely model and tamed different teams and and the sematase of the state mad official or unmainteent strongen bench and the state strongen benc and the state strongen b

The react heised and wound its very over a series of insteady avoided lidge and then begin to become to Ward 1 links could have been used on the difference of the the reaction of the series of the series of the test of the series of the series of the watches series of the series of the vertex is under the watches of the series of the watches series of the series of the vertex is under the watches of the series of the vertex of the links.

Must cost you an orm and a leg to keep if ployed in the writer." Andy sec

"Dostenselt" Invises

They came to a big where trans term house three sources is and set of why, hind guess tim. The on-body were attached to the reast behavior the house was is ned taken that usen behavior oxy, and the house the house and the both wes which the the house and the both wes with house the house and the both wes with the house the house and the both house the house and the both house the house and the house and the house the house and the house house the house and the house the house and the house and the house and house and the house and the house house and the house and the house and house and the house and the house house and the house and the house and house and the house and the house and house and the house and the house house and the house and the house and house and the house and the house house and the house and the house and h

Invidence the truck into the barn, which had a sweet hay send Acity emembered from his summers in Vetroch. What I's swetched the truck off, they all heard a low musical moong transionewhere deeper in the barn is shickowy interior.

"You get a cow. Charlie said, and something like rapture came over her face. "I can here it

We ve get three. 'I is said.' That a Boosy you heer -- a very original name, wouldn't you say butter? She threa a her is got to be miked three three a day 'fou can see her later if your debty says you can

Can I Deddy

I guess so, Andy serd mentally ourrendering Sometice they had pose out beade the road to thumb a note and had option sharptaked instead

"Come on in and meet the wife

They sholed across the dooryard, paus ing to Chaile to examine as many of the chokens as the bould get close to The back door general and a woman of about forly live came out onto the back steps She shaded her eyes and called "tou there inv<sup>4</sup> Who you brought home?"

Inv smilled "Well, the button here is Roborta This fellow is her daddy I didnt catch his name yet. So I durno if we re related."

Andy stepped forward and said. Tim Frank Burlon, mt am Your husband invited Bobbs and me home for lunch. If that s all roth. We te cleased to know you."

We too Charle said still more interasted in the chickens than in the woman-at least for the moment.

I'm Norma Manders she said 'Coma In You re selfcome. But Andy see the puzided look she three at her husband

They all work inside through an activities where save lengths were stacked head high, and nits a truge lotter mithal was utenneed by a wood stove and a long lable downerd with rack and white checked old/bth. There was an elaswe amel of trut and parather in the ar The small of carving. Andy thought

"Frank here and his button are on their way to Vermonic." Invisaid. If thought is wouldn't huit emits get outerde of a ktie hol food on their way."

"Of ocurse not she agreed. Where is your car Mr Burton?"

"Well- Andy began He glanced at Charle, but the was going to be no help, she was walking around the kitchen in small steps, looking at exerciting with a child's innocent but thoughtful ourosity.

Trianks faid a little trouble, inv sold, koking directly at his wife. But we don't have to talk about that. At least not right now

All right "Norms said She had a seep and direct table - a handbarne woman who was user to working hard. Her hands were tod and chapped - i ve got chuden and i could put together a nice sailad. And heres i lots of mark. Do yoe like mik Roberta<sup>2</sup>

Charle-ckin1 look around. She s lapsed on he neme. Andy thought Oh. Josus this juit gets before and before

"5300/ He said loudly

she tooked around and small a little too adaly. On sure, she said. I love mak

Ardy size a waining glance pass from in to the waine - no questions not now. Ha tail a saviving despare Whatever had been left of their story had just gone awring wave fluit them was nothing to de accept at down to farch and wait to see what in Manden had on his mind.

"They lurined off screenheee Mayo said That goddann faz skoal This yobs been bad luck from the start Ray An egghaad ard alkfiegh And we keep ressing from "

No I think we ve got them. Ray seat, taking out his existentiation His putled the anterna and speed is out the window. We'll have a cotton around the weste area in helan hour And I bet we don't hit a dozen. houses before comeone around here and ognities that hack Late Subject dark-peet international Harvester subveybox etrachment on the front wooden stakes around the huck bed to hold on a high load. I still think we ill have them by dark.

A moment later he was taking to Al Steriowiz, who was naking the Stumberland Model Al beeted has agents in take Bruce Cook remembered the tam Inxie fromtowir O J did too tithad been parted in front of the ASP.

Al went them back to town, and half an hour later they all lerew the huck thet had almost certainly stopped to give the two lugitives a lift belonged to trying Mandess RFD #5 Bailings Road Hastings Den, hear took

it was just past 12.30 PM

The funch was very nose, and Andy's appetite exignreed him. Charlie ate like a horse. After desaert alle balched and then covered her mosth quality.

live smiled at her "More room out than there is in button

If I easi any more Think I is split. Charlie answered. That is what my mother always used to-1 mean, that is what she always sous.

Andy united heady

Normal Invised getting up why don't you and Bobbi go on out and teed there chickens Whit to have a little talk with Frank teen

![](_page_34_Picture_27.jpeg)

![](_page_35_Picture_0.jpeg)

When Canon first released the 10-D it quackly established itself as

For a very good reason. Unlike other portable printer displays on the market, using therma to offer standard plain paper tape A convenience no other no

ter/display calculator could match turally there are other features

hat make this edition highly original

lay in bright fluorespent blue

A live memory for storing music of paloulated results.

An stern counter to help you keep track of entries

convenient add-mode with na decimal

And a percentage key as well as

And now Canon offers you a

The PIGD with rechargeable therees

Or the deluar P12-D with liquid crystal display and dry cell batteries with AC adaptor

Whichever you select, you're get

CANON PIO-D One of the best selling portable printer/displays in America, With standard plain paper tape.

![](_page_35_Picture_17.jpeg)

![](_page_35_Picture_18.jpeg)

"Well come on then

You want a beet Frank?

Well then I'ry said. I'll just call you

delight from outside Norma said some-

I guess I could use a beer " Andy said

But I knew there was somethin wrong the road back there A grown man and a

off going in and out of Alberry Irv said. If

Well why didn't you usil oo ahead?

Nikinds of them invised A grown man
and a little gri hitching rides the little cirl based out any memory case, and the cons are after them. So I have an unser it

'Happens all the time. Frank, And I think and swore out a warrant on the daddy That would explain all the reachingks. You only

dich Louithe police on us "Andy said "Her mother has been dead for a year

Well, I dialready kind of shecanned the clear Try said "B doo trains a proving mention ever else may be poind on it closen t ap-

So here we are at my problem. Ity said thought the little girl might need help. New I swet it matt be a good thing to

morning. Andy said, it's bed to know Charlie knew it too. He field mentioned

came from town, didn't you? See any strance people there? City types? Wearnor almost as soon as the grays weating them

guys like that in the ASP "he seed. "Warrow Locked like they were showing her some-

Probably our protuce." Aprily said ing with the police, Iry A more accurate

What soil of assemment agency are we

"What? That GIA putit?" Inv looked doubital

DSI-Department of Scientific Intelligance What they're supposed to be involved in any 'demantation admitted prevents



It sives you answers on plain paper tape, with clear less ble prote

Plus a highly visible 10 digit dislay in bright fluorescent blue

A live momory for storing or accuting incuis and calculated

here's even a specially desp compartment for the paper roll, so the tape is fully protected when traveling

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he popular P5 D and feature cked P7D both with rechargeable

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The Canon PalmPrinters htwosfit, compact and

They can only add to your

CANON PALMPRINTER A handy, easily affordable plain paper printer/display. In a compact traveling size.







# TANKING

Pop psychology's new trip is a float through inner space

## BY JOHN GORMAN

he house doesn't appear eventering & fresh-ar tap and Plonds plants on display in the front makes it different is a small wooden shack near the pool. It holds the iso-

Loste Tobri, who owns the house. began "tatking" two years and Now cone with the emphases of energy he coors the shack door and silines What will i find there? a loft inside The chamber is actusaits, dense enough to greate a mini-

unusual St Augustine water pump run noiselessly "There's gross on the lawn, a few rive inciting to see and nothing to hear." Total isolation awards you

am about to enter a worki of softronment so devoid of stimulation that if could help prepare automauts to

ally a huge bethtub samounded by a States tells me i'm heading into a lightproof casing, its Sea of leoiation chamber of inner horrors. Dr. John INTE very deep, perhaps 25 peri- Life developer of the inclusion tank finations at the most The water is says I will brid the perfect suckme laced with 360 islograms of Epson setting for in Stakespeare's words. "Mending the ravelled sleave of sture Deart/Sea that will keep anyone care " Robert Tynhurst, managing atloat Air and water are maintained partner of Samachi Tare Works. at body temperature, Tobin asplans, which has sold more than 1,000 tenks and humdriny at 100 percent. When in the past few years, calls isolation the hatch is closed, a "tanker" feels tanking "the opportunity for comno sensation of heat or cold Thick plate privacy" that will "someciay he

PAINTING BY MICHEL HENRICOT

The servoy-tasken exeminance. To key Shurtys a probability profiles at Dishhoma Modeal School who has worked with tarkets for 25 years any. "Annual be part of the controllant of glowing us, of the control who has a service the protocome who are the factilities that can be provide the control of the annual everyore. In a work where "future shock are growth it would be benefacilities who are provide the service the shock are growth it would be benefacilities theories are growth profiles in the shadle of services are shown and who is shadle of services are not with the shadle of services are not services."

I undress, hang up my clothes and shower

"Dry off your face. Tablet directs. "The read of you doesn't matter but if your face is well the water can run up into your eyes.

Then he shows me how to climb into the tark, causaring me to wpe off the soles of my fact to avoid tracking drit mo the will(r. "Til come back and knock on the tark, in shout an hour! He departs.

I read John Uny servouragement "The terri era an awarmasi tool, kei wesktaten: lege chanter, tika psychosynthesis. Ne psychohengy les alsamter or a aska and I find tark werk. Ne any of the above tools to ba effective on the anothet tools. Torkinster mysel and prache with C The trivial sector or a wery emple kanchen. It allows us to organet par awareness of curi internal state of bases, of our internal state.

My test sections are provided. The water

basis free up easily as restor out is to length. My ame foat beads one. Epsion as to descrive the length of the except same of outs and attractions is account same of outs and attractions is account outs a length and descriptions of the same of the simple same takes the length and descriptions of the length and the simple stealy data ways in access Bur the simple stealy data why body becomes a memory production. Insider control table for uncorritotable, but smoth force?

According to Dr. Lify, my journey should begin with a gradual movement away from the tense of physical teef. We body with beother a neural wiscal through which can bubble our phoughts, endlows, and ferm an bubble our Peerd horn the constantiatio of sensery information, will had myself ma mental asset text is not quite bloger, not quite determ. but certainly not normal controguements. Metri

Fearing in this freed state. Dr Lilly save il should be able to reach into https://www.il enes.cd my mind. These Lean lenat our new information and fresh perspectives on the state reportinge of my aerosis. In the tark il will be able to seption new though connections that have lain dement in the deepent Juness of my barchet.

The darkness around me remains the aaree whether my cyel are open or closed Stall is seems exister to close my ryee! At tost I feel time parsing. My thoughts and logical and body centrated will become userses? Will get scored and feel to day-



light? But gradually my body neosofia and ing (houghts grow achieve) measis come and go lies a replay of secont events in my mol. Skip, his busies the governing fails, and other happenings of the day. Then these maps too [Soft replaced by a jumble of memories and describe scinnas, instruct as the operation in the dathnoss and each the move inside my head it instruct his tank, wouldn't chive paciple med.

Lify's interest in isolation datas back to the early Fitus, when he was a bitter lesendor for the National instance of Merriel Health Reports on the use of total existion as a "transvesting" rectinique National accused soverthe and govarintential interest. Early volcations were not all solation would bing on sleep—all best—or comis and therthe hallowariational element.

In a 1000 Linearce of three occer mer, to Dodge to subset where the length of an angletistic They reflect the ater of the subset of the subset of the other of the angletistic They reflect the ater of the subset of the subset of the theory of the subset of the subs

In the meansthe Lay conducted to own research to to treat effects of physical relation and machine Lar less during instance and machine Lar less during the the definition of physical edition, and repeated by names' accounts, we're on paraneomany if not all of the symplemed the metriky is it. Persons in solders reparaneomany if not all of the symplemed to make a symplement of solders are approximated accounts, and the solution of thermatives on a cleap and back-level.

Life set full to propert the extended of pointwine textilent expirations at the deingfar this acadiment is not the deingfar this acadiment is the dedite collexpanse constrained the full law of the collexpanse constrained the full academic forcers (steps) where the text of the text of the set of the text of text of the text of the text of the text of tex

Still the evidence for nightmakes was impressive. Dr Jeck Mendelson s subjects respirator nearly unbearable. The participants in Sanford Cohen's experiment feit point of insanty after a lew hours of stang abor of armen on high-alitude fights could cause the elements discremision and globiness of the break off effect described by Dr. Hester Record

tinued to use his tank, first at Bathasda phin communication laboratory. He was

tionability designated the Lifty Pond, could be set up nearly anywhere. During the next decade more than 500 people librated on resensory deprivation or any other payofic catasirophe Lify recalls Those with use matter who they were or what inte of work

Lang in the tank I think of how Greg Jacobs, a football lucker with you de work consin, uses the tank. He believes lanking has improved his physical performance as

"I mentally rehearse my kicking by visuhe says "Being in the tank is like floating in a black yord and produces a deeply reout to kick it's like autoeupgeeton

Typ got more distance on my kicks and ween't able to do before. I m convinced it a

In my awa Lify Pand, the serve of my body suddenly returns 1 check myself over badik and the tank makes me aware that a practicing judo I can leel that meal-grment now too. There is no pain, unit the realization that all is not as it should be Everything else 1 m happy to note feelt

Life three tacking may prove useful in letts and cope with their pain while seattion, as do most practical applications of tanking, remains speculative, because it



OF THE 2.531 CAVES in Tennessee, this one in Moore County is particularly prized.

It's fed, you see, by an underground, ironfree spring flowing at 56 ° year round. Mr. lack Daniel, a native of these parts, laid claim to the cave in 1866. And from that year

forward, its water has been used to make lack Daniel's Whiskey, Of course, there are hundreds of caves just as lovely. But after a sip of lack Daniel's, you'll know why this one is valued so highly.



Tennessee Whiskey + 90 Proof + Distriked and Bettled by Jack Owner Deciliery, Los Mallon Prop Inc., Poste 1, Lunchburg (Post 351), Tecasone 37252 Placed in the Netronal Register of Historic Places by the United States Government Wy operani, says sensory depinitions meaning Parks Boardeld of the Universty of Break Columbia, "In statistical task column and the Columbia sensor and the Columbia Columnation of the Columbia sensor and the sensor how Lipks with philosophy and apcreash the task sensorship years unary construct lipks with philosophy and apcreash the task sensorship years unary as a potential to back regenerate Before targing con schement la potential before targing con schement la potential

"I think it's potentially a wry variuable lood and very practical it and expensive it desent take long it's really a promong procedure Bul we have to test it which Lifty has it done, before we know how to use it beat Dharwaie, it remains merely a mythcul tak

We one experience in the tark's growing necessaring mysical I liked my self-conceptializing away have lost any notion of examining is fault in a biocontrol of the examining is all in a self-aboothed comcessaring status and aboothed comcessaring status and aboothed comcessaring status and aboothed comlisting appearance in a second ling is supposed in the data lake second ling in supposed on the second ling of the incomething variance data. Option pairs

This depth of mental experience in Lify's vew makes tarking a support substtute for other tarms of mental therapy. Not everyone agrees David Defhilms in Connectual pay-tologish who has tarked, wernes that the experience is too interse foo intrapactive too unstructured to isably a celo.

"There is no question, he says that the tank does provide deep deep releasant But what bothers mu is that, unlied often mental salas such as modeling in the tank, your unmersion who youngit sait goods? When you cake that does booth been to go the even matching you might have how no guide on themast if you guided into been the other sait in guided of the other is the other sait in guided of the other is the other sait in guided of the other is the other sait in guided of the other is the other sait in guided of the teach."

Deferra cautors that uning presence mee danges that benefits, "to could apple that other mental inclineases potions asserted and acquiry valuable for this more away postheld (so it have had beencompt) of the task is such apped that is a open to abuse because trainers are entromely valence to the application and manapatient in they other ca. Most an abuse tarbies there when may pel more merits stateborthy take in object that had the term of the anyone

The meetal equation DePairina classifies have yet to innucle on the quict hum of my disserbodied mental games. Nathing inproposion my feating contactuarises until avague thumperg them through "Whet can that be? I muse. The same is asappoind to be asardpread. Then Tethni calls my name, or contained to the same of and reality preeps back bit by bit

First, it seems I must get beck into my body it is reay, like moning back into a lambar home. Inding everything where it should be and all the appliances in working order.

I atant in the doorway of the tank letting the water run off my skin and needpaining my body to the pull of gravity. I have been weightides for nearly an hour and a helt Unai my reflexes region full control again. These tion watch movement carefully

Back at the house Tober and L st down and discuss the expresences within the tark. The sinveys been rice works (hings, his explana) and the abacted annary New Age fastivation. An a 1979 facture in tary her rate a couple how Toestra who reveald him that at attring was a useful expression. For the him that attring was a useful expression. The tark reversion of the and viscable (pathod and surfallow reversion (pathod and surfallow reversion) to awrite whenever the experiation claiker ma

I find my concept
of self lading away, I have
lost any notion
of having a body I am a
biocomputer mind.
 My surroundings and I have
bicome one dark,
contemplative creature

Lean, wenty seven, a regular user of Robin stank, says, What I found in the latik, ways a place where I occult nearly reads. Sometimes, when the teen unusually up, so, the gark how been a time place to cool of Arter an hour or so, my brain and my body float much queter Everything is much queter.

The reptances soluble that most tankword food expension or his orield an explored of precess in Urly's ponds. One company, Samadhi Tania, plans to open sor public sank centers in the United States Hoal to Relay a Derver-based tank manufacture, health and the amende in openation.

We so out to bocome the McDonalois of relavation - zoyk Keth Cason, weakernichsibutor for Roat to Relax. 'This isn't a foot twenky thousand Valums are consumed in Deriver every clay, and we re sitelishmensgement consultants offering a better way.

The tank builders are alrugging to keep up with demand for their units which cost about \$2,000 aprece. They are convincied their product will soon become an essential therapeutic trial.

"It's amount "Lee Lettner of Satiadhi

seys exalpantly thow much live come to live mysoit aince I started using the tank. It is to totally supportive that it would halp almost all verse

Administration apartment of Datamate There Works, assessibilizing time in Boulder Calaxada shahas Labiner's sommerts " but, with the tank, i claim dat all impact hinguas speak boats taying to clear their mindas. You can do that influences in filteren mindas. The tank works a lot easier and tasier than set. Mind Control TM, or amthice deal in Camiler with "

Lify is just as enthusiastic. Those who went some kind of therapy in says, are welcome to it. All can set you is that the tark is the more effective.

Struty shares Lity's contoin of the trenspection wake of the transit is expension. "This hirst generation of isolation ispatiments were done like hields", and the retarix we began to notice the porther selped the serverithmicromation the floating expension. Its a key point their tess should up over the verso:

Burley believes the posted benefits of the larker will be mere from systematic use of the lark as an ecuazional and therapeute loot. "Mass door unintrustenal each larking, the essents," their to do with symbols Burl faster doe, but very imposted, in its own prif. Deve of the imposted in the door of prij. Deve of the imposted is our own about of prij. Deve of the imposted is our own about of prij. Deve of the imposted is our own about of prij. Deve of the own as part of that, were a price to own and the imposted in the internal price own about the imposted in the were a price own about the imposted in the internal price own about the internal p

"Bit register and the set of the

Lify is even more sangume. The only dangers instational mail are physical. If the tank is mechanically all right, go ahead. It you have any fears, work on them in the tank. Don thet here keep you away from it."

Whenever, the short term cuestions, proponent such tanking well certricula to expand because in offers particulations of the user. The binning proponence – a thpcal assummal item Fords actives Datity Hoynes exists, here your me a gantral leasing of well-bang that has belowd my work: my prospersitive, and weapying itm molved in 1 find that here much gastar self-averences."

With encomums like that tarking should be around for a long time. Personally I can hardly wait to try it again 00





#### BY JANE, BLADOW BY JANE, BLADOW A TRIDIT REAL DEVICES INTERNIT AND A DEVICES INTERNITY AND A DEVICES INTERNIT AND A DEVICES INTERNITA AND



PHOTOGRAPHS BY DUDLEY GRAY

6One day, entire cities will become dances of light and colorluminous night metaphors of tranquillity.9



The log locus of the Engine State Building Galawired, while, and Kurp Parched Ingli Borow New York CUI, the Mathematic periodic angeline is a sub-the The Database of the State of the Balance State of the State of the State of the State of the Balance (processing page) takeows: Reveloping and alternations Annual Manual Annual Cuirry Is shall be alternative Annual Manual Annual Cuirry Is shall be These means of decays reports the process press. Mathematical and process the process press. The Manual Annual Manual Annual Cuirry Is shall be and alternative of decays reports the process press. Mathematical and Annual Cuirry State of the offstate of the Annual State of the Annual Cuirry State of the Instate Annual State of the Annual State of the Annual Instate One State of the Annual State of the Annual State of the Instate One State of the Instate of the Annual State of the Instate One State of the Annual State of the Annual State of the Instate One State of the Instate of the Annual State of the Annual State of the Instate One State of the Annual State of the Annual State of the Instate One State of the Annual State of the Annual State of the Instate One State of the Annual State of the Annual State of the Instate One State of the Annual State of the Annual State of the Instate One State of the Annual State of the Annual State of the Instate One State of the Annual State of the Annual State of the Instate One State of the Annual State of the Annual State of the Annual State of the Instate One State of the Annual State of the

transform today's skyline into aturning abstract light sculptures of the future. Through their collective viewsh.

incompares for the halant initiation state control to the international becomes a result yold you. The trutane, Grany predicts, not will be created here and historica. Our bridge and buildings will not light up like Checkman stoos. The samewhere of the city, its galapoles and sovers, will terresorted physical attruture, philling on and sovers.

Grand Control clock transformed by 50,000 withit (accurd): eight stand base planets for each is Westington Square Park (sight).





6By using Klieg lights and selected color filters, we created visual poetry from steal, glass, and stone.9



Show all the first is suit through the first is non-mer and the first is suit to the first is suit to the suit of the suit of

Sensual values show Bullery Park engle in flight (init): two bonks of twelve 40 centituder langes load New York's Dity hall (shove)

# **A FATHER'S GIFT**

It was the greatest discovery of the ages: All he had to do was open the cottin

BY PALE J. NAHIN

ione found Christ No, no, don't say "On, one of shose copie!" Please, hear mo out i'm no zealous religious privert, no fanalio, not oven a fallen politician seviano uble absolution for miscleeds in office. I'm a hard-nosed consuler archaeologist on the staff of a well-known university specializing in the analysis of x-ray cost forrographs of the mummes of Egyptian pharache. So when I say five found Christ, Linear Lya Sound Ham

Fire never been a devout man. That a led to some interesting discussors over the years with my brother Jack who s an associate professor of ancient Middle Eastern languages at Georgetown University A scholarly Jesuit Jack had long ago kinded in the a fascination for Jesus Christ the teacher Can been? But I ve never been able to eccept the Church's dogma. that He was the Son of God the Senor here on Earth as the result of the Virgin Birth And who, through the Crustieon. reau or ne wigh term And with introduced the created of the second of th

version we consider provide the somewhat our work, con-tradictory four Grecols. We do, however have a fairly good brisish, interseman numed Gamal el-Zern, now deceased we do have potting only from the somewhat confusing, conictes of the political times. It was the rept of the munderous. He was a professor of philosophy at the University of Alexan King Hand tot whom Casesar Augustus once said he drather drater drate and was also on satisfaction and or a very all the must-

be a pig than a child in the House of Herod<sup>10</sup>, the Jews were oppressed by Roma, and the Chadren of God were eager for the commo of the Messiah long predicted in the Old Textement The smos were ready for a Saviot and Jesus Christ was the right man in the right time and place

Them in little dispute by scholars that Jesus was absolutely certain of His role. His life was no fraud, no shameful act of a He left us His image on the Shroud of Tann and nothing else.

A number of respected Bible scholars (a minority year but stil a significant number) have questioned the traditional desoription of the death of Jesus Primarily because of their execticiant about the Resumection I must admit, that has always been the stumping block for my willingness to believe. too. Since I am an Epiphologist interested in funerary procecurves the cleath of Christ has fascinated me for years lithed

It all started some years ago. While in Caro at the Egyptian We actually know so little about the life of Jasus, with what Museum, I was studying dental X raw of their objection of royal mummers as a sabbelical research project | met a

PAINTING BY ALAN MAGEE



and propulses department. I became investig with Preliasor of James we wate docusting our variance relation activities. Somehav the docustion of anound only inserted in Chind and my othvicien that this death was not all expression water what the Bole may actually say on the more in actual to started quesculing at the loss a law moments, and I oxed as the partner it his most helphone or motio with other docusties helphone of the partner it his must have seen the dopth of we thereas the occus he planuad on

So, my herdy, you are a doublet, my you? Good Reading here you will find among papers) howe concern making. These between they are accessed with the loss part of the Accessment of a between they are accessed with the Bit who are any—if you are as interested in particular (the Catheria Charther Bigets them you access, then maybe they will be accessed you access, then maybe they will be accessed hower the work operation.

What he schusly gave me wenerit the structure matualizing to the metal the siginal document have long been last, and it was photocopies of these hadscovered menvacritical that Professor rel 20m had including the papers he subjected would informat me

Take Circle was taken down than the Create on the full Calcybon acutate Acoustient. His body was according to the according to the working Acoustie Annuality to the working Acoustie Annuality of the according according to the according according to the according acco

That there are farty days between the Repursection and the Ascenser has always tascenated me, because Genesis inset membres this as the usual time rereward for embalance.

Could it bot that the followers of Jesus spatied His body away from the rock lowed to prevent its determent by the Remains who might have sumed it in a common omright game? Could it be that a select anheriant embalmed the body of the Massish and then asceler kuried (?)

The long-bask seconds given me by Piotessant al Zami gave me the winnexis. Arrang them was a lister tern Jopph of Arranghe ta a main named Tantakin, appanetrix a class hord. First sweatrin tim to sacroug, Joppin then disectional to evol takes of the corrison masses. Califain Aramac, which loaddinaid only with great diffacility.

Making an exact hand copy of the latter but coreculty deleting all references to desub by mane issen to my brother. Juck, over in Arsenica. My well for his response was agonizing it came three works later to over

Greengs to my beloved, but unsuperitary, hother

The stronge text (where dot you Ind (7) you tocomity sent was most challinging ( ongged the martial cancership but into into the samewhat perpleted. Where you intoin the Q States I want shake a long talk with you should that, maniwer to your request here is its variation of the original

And we bound the bound in them level and weekshes wounds. To score in strail take it was taken by right to a lateful blowce glow partitioner of the anoent and a preservation of the Egysteent. These two particle covered nucleical choists, wrapped in blandage, and particle to be of the Pheset it was particle out the Pheset. These particle out the Pheset. These particle out the Pheset is the score of the Fault Kings. There is was build, gains of them the Phenal in a

As I read these words-words I hed translated crudely mysell but now was sure

 I remained silent
 The strange look ... on my face no doubt was interpreted by the professor as disappointment.
 But it was uncontrolled thritt Because I knew the professor was wrong?

wate right — I could barely confilm my or, obtainer, Jopashad been embalined, and Histopy was mumified and free recreatly singpedro Egyptiand burnoi. But which was even more incredible was that I was also sure the colfin was no longer at its signifianti, I was also sure. I know when it was Bohro the Execution Maximum (colf).

But weath the cirily one forse these new decuments Had anyone eleminated the same conclusion set? A convertation if had with Preference el Zan. The day after printing Jack's kanslaten, put my concern to less the weat the about to extern to Assanction and the inquired about my reaction to the elevera had news the

"So, my trend, what do you think about those ancient documents now that you ve had an opportunity to existing them?"

Languezed carefully Just how much did the prolessor faulty income? "Genes they'se fasionating. But one letter attions they'se fasionating. But one letter attions they have not fastored by letter attions of the letter Armothes to lastituition. Concerning the events atter the Crucibicon Have you read that one Carata?"

"On, yes interesting to you, no doubt with your curous floater on the deeth of

Christ. But surely it cannot be sufferfild. After all, the expense of shipping such a contin so far would have been exertion."

"Yes" I replied, "but Joseph was a wealing man He could have afforced #"

Tsuppose, I suppose. But even 4 6 is true, it must remain a conjecture. Mar two thousand verses. "burried airwhorter in thousands verses. "burried airwhorter in thousands even burse kilometers of sond, the body of Josus will have include 50 million anth long app. Well seen kilow 50 million theat south

I tempined offers. The strainge look that must have been upon my tace to doubt was resepted by the professor six chappenement. But it was ready uncontrolled that Decause I knew the professor was wrong?

The activity of the Constant is leave the deposition of the Constant is the Co

Burnotthe marrines from the list of mean Egyptian morrines innorm (may alnady careless) isotherial in a back room of the makeum is second floor gallery learn, they had been ground. It was nonany marriny unless such a procedule was part of an opping scheduly skully But al morring martiness ware subjected to a martene a registion which were then flood.

On my anneal other museum i had been allowed to go through these scan pectare as part of my enertation. One set had briefly caught my attention. The young woman in the technic office had been un concerned, however about the picolem.

"Mas, Trecell saying "this group of protures is loggy it almost looks like an under response

Dh, she replied gianong quickly at the tile in my handa. It looks more from the plates ween taligned properly. The x-ray guns placed on the sole of the collar, you know and the film on the other and—

The yes thankyou Tamtemiar with the technique. I put the ble back and logot 4 The explanation searched partnerity plausble at the time.

But as I set elem before the professor I know what the east answord was The film had been aligned properly alinght Buthe marriny inside was weapped in lead Just as that encrent letter by Joseph of contrasticovelle the



Paving the way toward a solar society is the ultimate challenge for this environmentalist as he guides the country's leading solar-research facility

# INTERVIEW

DENIS HAYES

Set of development of the set based is avec to a disease function. They were then the new. Sets elevate that does not pointed by they were then the new. Sets elevate that does not pointed that were then the new sets elevate that the sets of the sets and the sets of the sets of the sets of the sets of the new sets and the sets of the sets of the sets of the sets of new sets that the sets of the sets of the sets of the sets of the new sets the sets of the sets of the sets of the sets of the new sets the sets of the sets of the sets of the sets of the new sets the sets of the sets of the sets of the sets of the new sets the sets of the sets of the sets of the sets of the new sets the sets of t

The solar administrator was interviewed by Othin editor Enc Rosen in Golden, Colorado, 26PP's headquarters Framed by a view of the Rocky Mountains in the background, the convenant on begin with an exploration of solar's current role in the energy recture of the United States



6Passive solar design is so simple and effective that only a fool would build a dwelling today that lacked solar features Wasteful conventional buildings are both unpatriotic and immoral .

mased spiar energy as a fixelous side

Haves Solar energy now contributes about six percent of the nation's every supply-far more than is provided by hucks creek: Most of it is in the form of hydroproducts industries, and preserve splar an

about a solar future solar technologies organy burlet by the way 2020 By 2025.

Orter! As you use the term then does solar rooftops to warm both water?

Hawkit Yos, although solar water hosters should not be scotled at. More than one denoes now use solar collectors and the of relar technologies at SEPI, we include human purposes within a lew decades of photovoltaic cells, solar technologies an

The sun heats air unevenly over the as opposed to deserts. Hot air reas, cool air rushes in, and wind is the rusult. The atmosphere to in a sense, a huge storage

Similarly the sun causes water to evapor rate from the ocean, precipitate in the All the potential energy in a hydroxilaction

fed sunshine, captured through photosyn-When the plant, or a fuel made from the diant, is burned, the hydrogen is opticated

now contributes about one lifth of manhowrity in open tes- in the Third World Great What is SERI's use in all this?

Haves We are the largest solar onterprise should exceed one hundred twenty-five million dollars. All these resources are de-

Great Why is a government-turidad inshtute dono all the? Why sell the private

Haves I would be the last to belittle the orheite sector's contribution. Nost of the important solar advances to date here

Green: Many prominent paople have dis been the result of private individuals and valoping them into commercial matrices. tract the attention of banks insurance million to twenty-five million cicliers are no

> vestment is being used to explore the sola. fractivers, in part thes is due to the state of vestors to focus on short-term horizons. In who care only about next year's bottom ity that is destrowing the steel and au

> ment simply cannot be done by a madeally not being done by the large time the can allord 6, the government has increase ingly stepped in to till the void

> fits is not a wholly good development incredible amount of the taxbayors' money

> tapes Especially at the more basic rethree is an atmosphere that contains an er rare in a faderally funded installation dwarf all other considerations. That Recipient Lab. It is my dream to transform

Haves Well, we tack at least one. We don't the Department of Detense asks Sandka Laboratory to develop a new werhead Smearly when the Department of Trans-

Housener REPE's research should nerve hundreds of thousands of farments, terts of Hemmed in by advancing technology, the artist searches for new identity

# MIRRORS OF SELF

BY THOMAS WEYR

South works in the part (the uncert in the term of terms in the term of term of terms of the term of terms of term

My pictures are not products of my will." Hauaner affirms "it seems as if my hand is led by the will of the picture more than it is

Adam, Take Cere (below) velocence threetened from outer spece, The Gardens of Vierne (right) the clock and compass of seasons

PAINTINGS BY RUDOLF HAUSNER



i danaque n





by ma, as if the picture know this better than i." Hausnar's early pantings refeat the explosition of inner and outer space, a searchfor identity in a world prereasing complex and

terrible? Lask in one of my pictures, and wherever does not tremble—given the human condition in our time—is either studied of éintermed." Adam is the name Hausner assigne to the set-portias: that domtates has anothered at

"Narro (pover); and new desparr kept Hausheit charsed to a naressere exploration of self (i.e., Evening Landscape (Move M), noe and outer spece im ore Adam Nei-Mis (eff) the sinst indexts Amsed, dated foor Adam in Order (bgN) date sectors the servers







Adam) Net unit the late Mitus det Vermals Perstaits Ruisiblepatients including Parkah, Hurie Minara and Havans who endeseaded to part their mer velope with operating all adaptiveind public accounts and an anexiste of lanow. Havante velo in his mici forties when he finally existence himself from the animum carthespic observations and management from the finante actinespic observations and management that the had havated this scin of a modest mendiant.

The scope of his art underwent infinite expansion. Birth, death, and regeneration began to commate his peintings.

Hauser's a spendimit and who throws a bushel basket of dess into each picture. He has never been adde to keep up with pictures stored in his mind. He is always behind, proof that in art, as in science, fulfillizent limps ofter imagination DD

To the Moon field, the anise's unsering a functional to the counces. Adver-After the Fail (above) art and technology locked in desperate confect.

Wew visions of inner sell emerge through art.

intersolation it had to be real ROBERT SHECKLEY



PAINTING BY ANNE KINGGARD

Lepsane Maihar was Sound in Front of the Mapa Maxim and setsion of ends apathon 100 extreme that it hock the efforts of three polererina and a patcering bound. From Blow, Messager, to subdavirien Takinto Sc. Caren Hongarki. In haddo to poly into a wet paud—a was sheet wound around the apatient's arrais out upper tabol. This immobilized tem long enough for an intern to get a skird of Walemmon Time.

The reporter has taken reflect by the time to Mise saw inn Miss all we havely actes, one of these a former gasst for time totated. Long, and a psychiatric number remed Norms to wail outside. The potent was thoring to associat baryone put from Miswas thorized association and the second valuem wave where thesis in coloring to the releard where over a well pack centrieve its foundly appendix.

Well. Mr Nigher how do you tool now? Miles asked

"I'm time Doc." Nother said "Sorry I caused that multi-evite when I came out of the space-time anomaly and landed in front of the Plaza.

"It could affect anyone that way" Miles read reasouringly

"I guass it sounds pretty chazy" Noher raid "There's no way I can prove r, built have just been into the tutue and back again

In the future nate? Miles asked

The tuture "Nigher said," is a pussival And what happened to me there—well, you re not poing to balleve 5."

The patient, a modum-sized white make of about thirty-live, wearing an off-white we pack and a broad simile, proceeded to tell the following story

Neterative provides the second second

"When here payled conclustrates service wet significant to have a service of the service of the service wet significant to a service of here the wet sits he was single on here here here hall site park where said pords and promendes and strangely heped status and tame deer and here were papele stolling arcund wearing what laide park was unaxis. Statig before here the bareful was anny winth tawas of man consolid contained the statistical of man consolid contained the statistical of man consolid contained the statistical statistical and the statistical service the statistical statistical service the statistical service service the statistical service service the statistical service the statistica

What is the?" Noter asked "What's happened?"

"Nell ma." the old man said, "did you happen to run into a reddah cloud iaan partie

centry? Aha! I thought so! That was a local space-time anomaly and thes stimed you away from your own time and into the fur-

"The future?" Nisher said. "The future whet?"

"Justithe future," the old manisted. "We re about four hunched years sheed of you, give or take a few years."

"Now eputing mix on," Notice shid. He asked the did man in vanous ways where the creaty ways and the did main in replicid that he reaty ways and the did main replicid that he reaty ways in the Notice, and it was not only trad, it wasn't even unusual, theraph of course it wasn't he nort of thing that happens wavey day. At last, Nisher had to dooant if

"Well, okay," he stad: "What sort of future is this?"

"A very nice one," the old man assured

"No silien creaturas have taken us over?"

'Has lack of tossi fuels teduced our

The injection had taken effect by the time Dr. Miles saw him, Miles told two husky aides, one of them a former guard for the Detroit Lions, and a nurse named Norma to wait outside.

standard of living to a bare subershmbs

"We solved the anargy crisis a few hundred years ago when we discovered an inspensive way of converting and into shele."

What are your major problems?

We don't seem to have any

So the a Upper

The old man smiled. "You must judge for yoursel" Perhaps you would like to look

Water parent?

These space-time anomalias are selfregulating " the old man said. The unverse worth tolerate for long your being have when you ought to be them. But a useful takes a lifte while for the unverse to catch up. Shall we go for a drof? My name s Opan.

They left the park and welked clown a pleasant, meetinest buildening. The buildings whe attings to hather's eye and seemed to dentam for meny startige and gives and obsocriant obtains. They were too back from the stoet and bordered with well leggt peer learns. It looked to helhor

Ine a mally rice future. Nothing excite, but nice. And there were people walking assund in their Greecian tarrice, and they all locked happy and well fed. It was like a Bunday in Central Park.

Then Nigher notices and couple who had gone beyond the tigking stage. They had taken their clothes off. They were, to take to werheth-century extension. Making it.

No one assetted to thrick the wee ussound Dgun dich's comment on it, so Notive open's any anything, either Bit the counten's help nobling, as they weeked along, that other people when making ut too Calute is two people. Alter people week reading the open of the second bases of Dgun weighter three was one assumal holidary competention.

"Rs rothing epicolal," Ogun said

"But why don't these people dont in their homes or in hotel rooms?"

"Probably because most of them hapowned to meet here in the shoot."

That shock Nisher "Do you mean that these couples never knew each other betoor?"

"Apparently not." Opunitard "Tithey had, I suppose they would have amongod for a more comfortable place in which to make love."

Nother just stood have and stared. He trave it was rate but he couldn't help it hobody seemad to mind. He observed how people tooled in each other as they walked shood, and way not in a white combody would smite at comerce, and someone else walks time take, and they would sort of heatste for a moment, and then.

Note: the same time down taking questors at the same time down interrupted tak me by so explain store you have all terfetime among us fou come from an age of excellencession and could counter. To you his must appear a spectracied unbitded feares for us it is no more than a remain expression of affection and exiderer.

"So you've solved the problem of sex?" Nother and

Note of less by excellent: Capit I det im We were relatively frang to ability to be an excellent to the second second second to the second second second second second ware is not to be the prevent strate issue upon watch is made. If we sprend that plateable was hade. If we sprend that plateable was hade. If we sprend that second second second second second plateable was hade. If we sprend that second s

Nother was about to ask Ogun how that attracted manipage and the family when he noteed that Ogun was smilling at an attractive blonde and edging over in har directon "Hey Ogar/" Nisher and "Don Heave

The old men looked surprised "My dear fellow I witin Labing to exclude you. Oute

Nastwr ages that a lot of people had stronged They were locking at tem amilitia Now wait just a minute," he said autorresteally taking up the cockreech pos-

But by then a woman had hold of his log. armost and somebody else with pitching his hingers. Nether got a little hysterical and straided at Doury. Why are they doing

"It is a spontaneous demonstration of our must pleasure at the rovely and polonancy of your presence it happens whenever a man from the post appears among us. We teel so sony for him and what he has to go back to, we want to share with him, share all the lows we have. And so

Nichar Initias though he were in the middie of a Cinemascope mob scene set in ancent Bome, or maybe Babylon. The it with one another and on top of one another and around and under and over and in between But what really got to Nother was the fealing that the prowd gave

tive a num ocean of lows, compassion, and understanding He saw Ogun's face receding in a wave of bodies and called out,

Weators from the past always send out bay wherears " Ocur should back "This

All the way? Nether couldn't traue out what he was taking about. Then he got it and said, almost reversetly, "Do you mean-planetwide?"

Down original and then he was core Notion saw the way it had to be -- this group of people lowing one another and pulling more and more people into it as the vibes got stronger and stronger until everybody in definitely Litopia. He knew he had to figure out some way of bringing this massage backtohis own time, some way to convince people. Then he looked up and new that

I amongs the instation was sail too much for you?" Mites asked

Nature amiliad. His evolids were droop ing The Valum rush was passing, and he was coming down fast

Toursa liust heated out," Networked "I thought I could explain it to everyone. I thought I could sust grab people and make them own up their hand-upp, that I could for love. But I went at it too hysterically, of



course, I scared them. And then the coost "How do you leel now?" Miles asked

Tim tred and disappointed, and five come back to my agrises. If that 5 what you want to call it. Maybe dwas all a ballucitaton That doesn't matter What counts is when we still have wers and energy chases and sexual hand ups, and nothing I can do

"We seen to have made a very rapid actustment " Miles raid

"Heil was Noone ever accused Leonard Noter of bong a slow adsister

You sound good to me," Miles seed. "But I would like you to stay here for a few drive is genunely meant as an assistance to

"Okay Doc" Nisher said drowally "How long must | stru/2

Pertrans no more than a day or two ITI release you as soon as I'm satisfied with your condition

"Far encash" Natier mumbled And then he fail asleep. Miles told the orderives to stand by and elerted the psychiatric outre. Then he went to his neerby neerb

Nisher's story haunted Miles as he true of course But suppose just suppose. had achieved a state of polymorphous perverse sexuality? There was, after all a . lair amount of evidence that soace-time

Absurdy he decided to visit his patient nonin. He left his aparment and went back. to the bosonial humans now impelled by a strance sense of urgency

There was no one at the reception deak. on Wing 2. The policeman normally stationed in the comptor use making. Mint ran down the hall Leonard's door was open, and Miles peoped in

enough toom on the floor for two seclars (one chatter, rurse named Norma, two student rurses a policemen and a middle-oped woman from Derwsr who had been visiting

Where is Leonard? cried Miles

That guy musts hyprotized me the policieman said, struggling into his tiou-

He preached a massage of love." said in Leonard's wet pack

Where is he?" Miss should

When ourtains flapped at the open with the Mico stand out into the develop his basel vision of the future, he was sure 22 down the country He could be attrabate Makes thought How on earth can I And Juni? How can I ken byt? DO



intercept in loss than one offit drives a much shorter time for the bright to realize its being character for the bright to realize trans to reach the same conclusion. If the character and there are the bright of which within is out of communication with US be obtain and poperties we might not want between an or he loss of port approximation.

The space shotle oculd be put in smaller scopedly NASA and the Defense Depenment are studying chuttle sarvellance nysterna so ware an advariate only that their spacecrafts being statised in space, allowing them to land or moneover the shuttle out of harms way.

No one should be surprised at the Soviet program. In 1965 a Soviet military those many decorbed the RKO Devision of the Soviet PKO entraciatio transition as a component part of an obtenio, using robot for disatorying the enemys commo means of tighting. Becall, spèce steps, satélité lightere, and other tight apatratuses are the base means of the RKO.

It is guite possible however, that the 'energy' that most concerns the USBR is no longer the United States. but China which is developing a military space coord bifly of its own. In our A-Sat negotiations has listed between which to bot any infor-

ferance with U.S. spacecraft but has proceed to tracky impose that ansures the Soviel Linne Remote available processing an allow with thereas are volved processing attack, any approximation of the spacecraft, but in a base want would allow them to attack of Linnear Remote Same approximation while all underlang them agreement with the linnear Same.

The Resource work to heap their and topologic system operational union may Able investors laway, when is a distance the Unest Balawa would prefer tourwal. The Resource have a network of the Union against conducting turning full and Balanch RJ. Commend and Baland Lawa Balanch RJ. Commend and Baland Lawa against conducting turning inferential tests the Russian segarated by find a letel two marks segarated by find a letel two marks segarated by find a letel two marks and the production.

Important as the Sovial anticuletite system is it is only a small part of their space R&D program. Their manisol spacetlight attort is also extremely active

The highly successful bally is a power planer is a case in point. Balad with the success of Selyut 6 or which 20 opetion of them for 175 days, the Russimis said the base Salyut would be the central one of large more modular Soviet space stunew. Text is applications—monitoring

crops localing resources, and the likeand space solence are a major port of Soviet space-solence are a major port of soviet space-solence and solence the solence represent concern should here initiary uses of a permanently manifed Sovietspace stabon. Again, one coasts of wortry is had appressive forder transmission to Earth are notified to conset their content.

The Skylut is space stream has changed as lot since prevents mobile. In the two deaking ports, one an exhien of instead of eaching port, the Russame lad to record and the space-shift all mounted main propulses restarm. Space of the second provide and the Sayut 6 starts contrast provide and the Sayut 6 starts contrast wate designed for matined military reconmensations.

Balyur 6 disor bea a new propertient system, and the descent correction and terms, and the descent correction and the and outcome to the descent properties and and outcome the pass these tea enging proper used different properties to be any source of the basis. Source tradeing seasciant in orth ( for this the Russiana reworked the basis Source and the seasciant and the seasciant output and the seasciant and the seasciant output and the seasciant output and the seasciant of the seasciant output and the seasciant output and

Orbital reliating is a basic step in space exploration. Buoved by that recent suc-



creases the Russans are likely to exploit it. further Space releating, coupled with even immed assembly in orbit would greatly increase the useful payload that could be sent to the moon or planets.

More Salyst hights will probably be inquired for continued Soviet with on manifed toeconvisionnoe from space Solytis 3 and 5, with all-initiary oraws, when devoted to reconnection contained when devote to reconnection to the second base manifest in the second second second coertoh digits it second levely that Salyst 7, dae for leanch this year may well be million.

The Resistance also exchang to empire their unmanifed incohardisations cruit. The JSBH's started incohardisation in the JSBH's started incohardisation the recovered Twentis in out to the firm week, thermatume to their to the firm can be recovered Twentis to the firm can be recovered Twentis to the firm can be recovered Twentis to the firm data and their to be firm on the starte and a watch over (turope, the Used State and Chart The Researce are now working on a corp several stability that rectly miculate charged the firm recovery. I will exable the Researce in the recovery a well exable the Researce in the recovery in the recover in the recovery in the recovery a well exable the Researce in the recovery in the recover in the recovery in the recovery in the recover in the recovery in the recovery in the recover in the recovery in the recovery in the recover in the recovery in the recovery in the recover in the recover in the recovery in the recover in the recover in the recovery in the recover in the recover in the recovery in the recover in the re

The U.S. Air Foots for many years has used smiller lim-when pationsail made by Lockheed. These are now being inplaced by the KH-11, which transmiss the mages digitally. This offers even genetic capitality since the satellities useful life is not immed by the lim supply.

Other Soviet space recent his general toward electronic intelligencia gathering meternalis processing in zero granty and sauch new military techniques de particle beam and laker wespens. Beam response wortant extremely close monitoring. Soviet developments there could radicatly alter the strategic balance between the two supercovers.

Couples with these topolanes control tables is exhibited at damp pare spirits the Server (pape program. Cicke a locar methods) is exhibited at the server table and tables at the server tables and tables at the server tables and tables at the server tables at the server tables at the server table listing couples and when it is server table listing couples and when it is server table listing couples and when it is server table listing couples and tables at the server and tables at the server and tables at the server tables at the server and tables at tables at the server at tables at

The Rubbars als planning even more ambroad measons selved 6 for instance, has involved maliple fight dopches with different witholds in a suma in has been also the TMASA Germin program of the 196bs, thing new loctingues and building confidence in them. In Germafic case the new methods were acaled to the Apolio

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lurar program Salyuta new techniques will help expend space station activities in Each orbit

Despite these developments, the U.S. government has appained on to netter the max approximation of the setter the space hight. This is not managers at MASA to the better to solve an analysis of the solve of the setter solve and the solve provide the setter of the solve solve of the setter of the solve solve or a setter of the solve solve or program are sporty and largely nel-

Some oficials are concerned that Soviet tracker systems recover too little infallgance analysis Projects net directly inwhed with mittary advites recover less study than a needed to assess ownall Soviet canonization.

NASHs buckpit is also a worry The U.S. spaces shaftin, once operatorial, will be far support to anything the Russians will have Continued limited buckpits, however, will reduct the shuffle equipment needed for long mascers, allowing the Soviet Union to marging a lead over the United Selves in the marging half.

What does Sovel space activity imply? Space statem will great and become more capable. Long duration measure and or bala relianing will contraus to be important. They will lead to such new activities at the construction of large permanent space structures and the assembly in orbit of home sure and cleandary measures that or home sure and cleandary measures that are

suse eventually to involve manned flight. The USSR will continue to launch many

The upper with obtained to instant many method, and it is not all streams in device, method are instant and streams in device, method areased without a contrast to the patchy soviet occrrd of the winty 100% the more help ymain is paced, the other at it they well become. This will enhance there use all gapaces for othe neutring and method purposes in the begins part of their efforts.

In some press, Savet systems could use grant impowerime. Dut kills development work is exident. These incluse civil spacescence and Earth explications staffiltes. The Resistant and developing is Landautipe apaecident. Dut it has nother like US auditate Sevet comitmutors in this cathgoy, and will comitma to do in the

This functions and dentry lose to by mesons lose NASA's toyogit 1 and 2 specerate to upper and Strum, sur flag lose that micromesture technicality of board computation, and ground-based deep-special kultering anoded to put inft a mission of such procentris. Their Stars and program to solare staffic proceeding special years ago strumed the solarity weld by requiring according target from



the Venuesen surface, Similar mesons in 1978 failed to relem my poliurie, however There has been table development between the Venarab 50,11, and 12 speceralitated the Soviet vyear. Their Mars-mission speceratin have been working be flow to compared with MAS/Rs very capable Manner 9 enr Weng probes

So too, the Sevel Union has nothing to compare with our high-energy adenomical doperations which all mating scentral doperations of enormous importance. NASBS 2.4 meter spoor kellscope: to too sourched by the studies in 1983, will yaid a sourched by the studies in 1983, will yaid a sourched by the studies in 1984. The USSR sourched by the studies in 1984. The USSR sourched points in that only the USSR sourched points in their only the USSR sourched points in their only.

"The Research thermodelisticm valuable controlutions in haral exploration but ther program is lagging. Sovet extended, how we have been strong interest in a limit backede lander. Such a mission could have information, or even sum funds on the information. Or even sum funds on the information, or even sum funds on the information of the sum funds on the information of the sum funds on the information of the sum of the information of the information information of the information of the information information of the information of the information of the information information of the information of the information of the information information of the information of the information of the information information of the information of the information of the information information of the inf

The Russian want to fly more capable planetary missions, and they do recognize ther technological deheatments. That is a larginequart wey thay have teamed with the Franch to fly a mission to Weak in about 1984. The planets probe will float large balloons carrying scientific instruments in the Variasian atmosphere.

The Russims will carring to ity mpotart paratesymptotics, but hey carring too mapprobable reperchent and carring to path terr hybra and they are hor only colls on the tacks. The National Academy of the path sector and the sector of the approximation of the sector of the approximation of the sector of the manufacture massions. The Some Lincon would have more to gain than to lose by coopering such a polopoid, and coopinneed applications might well provide more formation about the path of and the formation about the path of parates.

For years the USSR has stated that its fundamental arm in space is to establish permarenally manned space stations and to ity manned measures to the planets, primarly Mare. The Russans are not far form actually building the space station Than hat manned fight to Mars is much writter off.

They issuements on both of these objectives have been much stronger in the part too years se they have been encouraged by here successes in manned specified? It is clear they are working with inserted Vigo toward achieving both goals. The very hart twy have actabilished those point will help the Hussian's more within space program in many weight.



The pole as Christen godell ambasactors holding aromous tallers and motiving the Christen soldery. This found colloges to basch fire dotterns and to tan members to disserinate their goal Fittings, contrainreation atta and leaders at meny of these schools helping in cashs to proselytore through mass communications.

As their success mounts, electronic gospethenes inclusingly retreations the everyclay work, isolating thermaleles behind their corporate ministics and TV programs. Arraive apposes have meen ritio a end of pop samhcod, creating a partheor of mances tradematis

What with apport is more and more also fraine preaches begin to water the anwater and violation of a violation of the apport beneficial and an apportant of the apport labeled of the approximation of the apport approximation of the apport approximation of the apport apport of the apport of the apport apport of the apport of the apport datase are mail tables. What hash Godwat her beneficial with the apport

The electronic church insymals the hist step in a technological revolution that could transform American religion. Psychologial Robert M. Lebert, of the State University of

New York a Boury Brook, Inso studyo the general statuation of bruch the foreases the anergence of a periodic of blochoro de momentarion. "I evidence teach reaching decompation at only a local contravity and the status and an end of the later philosophical as to the documentarion ander. To produce These contrains will offer mode services to completely and same the teaching will be and any enth the teachers vasail and and any enth the teachers vasail and service and upon an and a strength of service and teach of an and strength of teaching teaching and the strength of teaching teaching teaching and teaching te

"The mean teaching of the set of the first device subgroup as a plonning of Dooble from Sundary services. Unquestionably, how we pre-main set of the set of the set of the value regionar batter is the part indicating popularies at the values in the part indicating popularies at the values of the authorized popularies at the exception of the set of the comparing independent wave about set of the area before the set of the set of the available of the set of the set of the plane of the set of the plane of the set of the set

This squaeze has increasingly deepened the distract of wideo preachers by many maniferen designman. Citios when established churches see these media eargidets as crass commercial/bets of the farth who ture churchgoist from their press and money from their collection raises Above al, when these IV semano-



For between wrone, the between kind fee, is influencing the begives initial and fee, Marty feed, "Local ministics are finiting mould by the chromes and methods of these outpeties. They are feeling the programs to compete a set of the set of the set outpeties. They are feeling the programs to compete any set of the programs of the set programs of the set of the set of the set programs of the set of the set of the set programs of the set of

Many obspaces also have the property participation of the physical solution forms a simplify gives have. We have beterns to supparted in televation that we tard to bage what a power bit modern the programma in the backcome. We have not makes to take backcome. We have not could be and service at the target many and backing to home and back the back of the target many in the participation the service at the target many in the participation of the target many descent many and the target many and the service target many and the target many descent many and the target many and the service target many and the target many and the service target many and the target many and the service target many and the target many and the service target many and the target many and the service target many and the target many and the service target many and the target many and the service target many and the target many and the service target many and the target many and the service target many and the target many and the service target many and the target many and the service target many and the target many and the service target many and the target many and the service target many and the target many and the service target many and the target many and the service target many and the target many and the service target many and the target many and the target many and the service target many and the target many and the target many and the target many and the target many and target many and the target many and the target many and target many and target many and target many and the target many and target man

Some video evangalistis have acknowedged the temptations of the tube. There is an eactacritance power within the medium it has the potential to meler in paper here out of anybody. Follwell candidly admits

What in the ord scene har routercorreg of 1V solvebra suboty relign and is tradeventiplacent locatery While Wilpow commercator and therauti Davity Prototogrammercator and therauti Davity Prototegra scene. The Devent Inscription the toy has poted as a linear location of the grant scene. The Devent Inscription the toy has poted as a linear location theorem manages. However, there have and second the values of underwritery activity the scene second scene scene scene scenes activity the scene second scenes and the activity the scene second scenes and the activity the scene second scenes and the activity the scenes scenes and the scenes and activity the scenes and the scenes and the activity the scenes and the scenes and the scenes and activity the scenes and the scenes and the scenes and the activity the scenes and the scenes and the scenes and the activity the scenes and the scenes and the scenes and the activity the scenes and the scenes and the scenes and the activity the scenes and the scenes and the scenes and the activity the scenes and the scenes and the scenes and the activity the scenes and the scenes and the scenes and the activity the scenes and the scenes and the scenes and the activity the scenes and the scenes and the scenes and the activity the scenes and the scenes and the scenes and the activity the scenes and the scenes and the scenes and the activity the scenes and the scenes and the

These eventses, sources of the Charlot mice media milemean? Dr. Dox docent there are incourted to back of the media milemean? Dr. Dox docent there are Druch to backet and when support there is together and dows support them each other. There we all always be it need for the coherters we all always be it need for the coherters we all always be it need for the cohercep of video everywheth has laided from the always? BO





twisithe Intrane Dr Göldwell had ever teed a lens-implant operation, and he was nervous. Eye operations are alwast difficult but one sip here could leave the palaest permatrently blind

Looking incude a microscope, he guided he surgical instruments with knobs and handles. I will find analysis lo him he had always foil more combradole when he could hold the look in his stands the knew that when dong microsurgery patociary on the syst even his standistic hands thele soo mich to opense discibly on the defaults these.

Peering intently through the stereomcroscope, he was how ready to make the final, major increan Dr. Caldwell took a

deep breath and began to cut. A moment, later he gauged, "Oh no!" and watched hololessiy as the later scalpol bit too deeply into the petient's comes.

He located as all D bot Review predeto of intercourges that University Fragment to other courges that University Fragment as a final socially. Die Farmer said "Bie a five minute basist and by it sgam" aller the socially course of the same coexisting on a live patient which is what excellent support usually must do body the sais working on a compute-operated be entre operation and respond to how which the support haven reactions which have the support haven reactions which the support haven reactions which the support haven reactions the support to the support to have the support to the support to the support to the support to have the support to the support to the support to the support to have the support to the suppor

our prevent capability the emulation proess is already work in numerous applicabore, and new ones we consistify being developed, many of which are to badhing ment become more measures, concrises, and expensive, investment provide consults them becomes a costly, contained stargerous undertailing costention of unexality that becomes a costly, contained stargerous undertailing. Development and applicable them to that expensions.

Computer-generated proties of KC-135 Minker as seen from 8-32 banber mockup, in approach for midelr whileling (top) 3-D aimufation of water pressure surgarizities a New spinar device heft) Computers create a makebelieve world that mimics the real one to save time, money, and lives

THE SIMULATED SOCIETY

BY HAL HELLMAN



A spokesman for the Rodfon Corporalien, a major producer of annulators, singopsis, "Whit hermini and contracted to account for the loss of three thousand sings in the liast tan years, the need for improved manther exemption acrossis."

#### FROM CAR SEAL TO COCKPLT

Altrody there is a simulator to tesch people how to actual every type of movmg which—industry trucks, lasks, somalize vessels, administria, divisity, and association of the source lost every year in alto acceleris. This isother training of divisits at a mail, nemaritical alto acceleris to the source as a concession that people that before training of divisits at a mail. The mail acceleristic training of the source as a concession that the moves as a concession that mouth devises to be.

In present driver-training simulators, the student dets some sense of driving in that the gas pedal, shift lever brake steering wheel, turn signal leves and other functrotal parts of a parts "cockpet" are serve lated and the student's handling of them is patefully monitored While "driving" the students observe a fim that unravels an actual route before them. The dever is thus constrained to follow the range that has been photographed, and so he gets ittle serves that he is actually in control of the drive Since his seatia motionless, he must contain without the proprioteolise serves tions that would accompany 'real' ancelerating, turning, and stooding

Bit these services are become purdependation to exching tength how to drive its not so much hall good "otherter insinguating on the anglitubtion and average possible put don't do here may be applied in the field and do and a service possible put don't do here may be applied and the application as an applied and these come only form and and of practice with antigeneous who has had also of practice with antigeneous who are care as alway doing commitme whom as

The most expensive, most advanced simulators are being used to prepare people to operate the most expensive must advanced actioplacy

"Alternaght Tindo mean Terless pateed an explane locating to locat the course of an Eastern Anthone 727 per un Marria and Teaur top—except for scene tather increases the backnow, a thread to an except patient top—except for scene tather increases the backnow and association of Propertibacknow and association of Propertiand the scene and association of the form of the scene tather increases and the line and association of the scene and association of the scene and scene and

We carrie comp in Though I could see the unway carried up to meet us at do would too stops as angle, I was totally unpropared for what happened next. We ready hithbal unway - there are obtain way to describe it - barr' We bounced up some ten maters. We have the game and was the time is then the game Barr Ver at the time, then hally held the ground. But betoo - core

cause of our high speed we were netwrng the end of the runway My "copified" wills applying his brokes hand and add me to hold on 1 wes pitched torward in my seni. We came to a scleaching hat, just a few means from diaster

My heart was pounding. Finally, I branche classific phrifti filter what never lab. Warn I was in a tight simplasm. Cabin only merchinal altachts of hydraxie actuation, digital composes, and a couple of blassification some generalism. The filtder and the composes of the second second of the second second second second second metching (surface), so is more than the metching (surface), so is more some metching (surface), so is more some metching (surface).

#### SETTER THAN PEAL

Bill de Dacker, who trans pilota n simulators for Flight Safety International, mandauns that designing a simulator is ao busity bander than designing the plette itself Simulation, he sings, its belin att and

Gus Grissom would hang a lemon on the first Apolo simulator before "flying" it, just to be sure everyone knew how he folt about playing Let's Prefend. He later changed his mind ?

science. Not only must an advanced arcraft smulace be able to do everyfilming a seal plane calco - includery simulation of hundroos of proteines, emagencies, and malunctoos, bus a must all be dona by inventos." The prossure gauges must work but a malunction spinowood by electrical corrinant from the computer and form a seal lowering of pressure.

If the instructor discides it's time for a flameour is one arriging, the unbalanced forces that would act on the real amonth must be fettin the controls of the simulator if the peter instructs to quickly or slowly than wratewar would happen in the simulator flappen in the simulator happen in the simulator

The sensitizer I todo mimicked reality by rewing my section a watery of ways to conrespond to the expension of the contools. These musterials (up/down into three straighthas movements (up/down into three straighting three), and three realitonal cree (roll, picts) and yaw or director). A simulative with the capacity to mimic all these motions is called a simulative and motion.

He the brakes in a real place and it will slow down because of laction forces be been the wheels and the runway and you.

backupp of your nertial motion, will be they investigated when your that bittes in the averylation, the whole cables mover backward about hall a motion in the rest, you led as it you are moving howerd. This sight movement is enough to motion you take you are being shown forward your back you are being shown forward your back you are being shown forward your back you are being a forward to show that a start your body and mind behaving that deceleration is estually according

The environment and a concervation that the matter or as solved by part and any part as producing in the descentual or. These environment and the solved by the solved by the solved the solved by any part of the solved the solved by the solved by the solved

In the meantima the colors is "enceiding back" to its neutral, or reactly position in a format of metalon. Becaute of everything dise that is going on, we don't realize that its is nappening Byth a react the allow has moved book to its complete. The color has moved book to its complete the color has moved book to fit company positions, and it move proches upward signify to make us think we have taken behavioral of a physics.

The terrandous bounce we tack while linking the Easter Arines simulator in Netro was produced in essentially the earns way—although testor and more focably Arche same time the visual image "out the window" is consisted with the picts acteria and the movements of the targhane' making the whole illusion very correlation and Malke.

### SPACECRAFT

Where automatics now sprof to be enignment and southest the first mask other from the coulted revised large that the southest there presented in the formation of the there presented in the first measure with the southest of the southest of the southest had strong doubtes about the value of som ward hengs allowers on the first Addition southers. Others have been applied by the southest of the southest of the southest providers of the southest of the southest of the southest providers of the southest of the southest of the southest providers of the southest of the southest of the southest providers of the southest of the southest of the southest providers of the southest of the southest of the southest providers of the southest of the southest of the southest of the southest providers of the southest of the southest of the southest of the southest providers of the southest of t

Garaja Gerlin flight director of the Acolo I mession, has and that "the greener untable starry of the mession in that of the appacent presidents." Not only did these devoge turn auto be indepensation in the solutions of alternary in action to the solutions of the starry of a starration reore. That occurring when there alternary water trapped in a importance affect that that been origination an adoption. The New York Times experted. "The courtings improvidence, that ruised the excepted space-tit large were mitrige necessa the product of an isotrardinarily subcome assembly of smillatos at the Monado Space-shift Device in Houston, and role, where Devy makesith procedure cannod unit space was letten to cuote. Each and rejected if the simulators showed it to be dangerous or improvement.

Spool duble operatios are also been transfer in multiple accurate here and backaring environment of space in exbackaring environment of space in exbackaring environment of space in extension of the space in the space while large water charment in the space in the environment of the space in the space in the space interpretation accurate and a space environment in accompare the space interpretation accurate and a space environment of the space in space and the space interpretation accurate and the space interpretation space in space and the space interpretation space in space which the flag control models in space.

#### EMERGENCY TRAINING

The inchringe of semializer traching other appects to topoly a well in this basin supported that if the tower plant operatory moving in the two mays blackana semianatized in the Necthwasten record years had that energistry terming, the distantizer of fects might have bear averted. The prodution of course in this (difference) are plant direction in the Necthwasten of the solution direction receipt of the unity control room in is a mackup of the unity control room in which the intergency can be encladed.

Now there are softwared correlacern enablers of a load of utilizes ascluding huckes-power parts, in which construct on load huckes and the werelement of the software and the software are also being used for an infation are also being used for an infation overrise. For of which are software for the unit balant and enablement Cartiers for layued network gains out about \$100 million about \$100 million gains candid down to alware. Monight gains calculate the dargerout A complete analytic has been built to him operative software.

Another type of physical provideo in the other here is each of a basis of the other of physical systems such as basis of the physical systems such as an end of the other physical for recognitive and will be able to the other other and the other here here passes in the interpret may little startist in creases by the parcent have will be able thereast with appear the type. Because and the other basis will be able to the other basis of the other basis of the other basis. The other basis of the other basis that will specialized in the other basis of the other ba

All long iki the characteristics of a system of people of equipment can be put into a compares to activities can be identifiated Charges in the accretilites; the growth of weights world population forecasts—all con be smulated by compared. One intersisting application is the projection of how structural interactions are interactively of detering forces such as conclusion eventuals, of the interactives can include anything from tain experimental dams to automotive points for the numan shall.

### SIMULATION SAVES

But with all this the main application of immibitors remains, so far coefficient to ancriaft. The networks are interpretent to the important are the high cost of jut fuel congression are larses, and the fact that operating a modern jet around con cost thousands of collicits per hour if in columously impractical to have a pilot practice takeoths and landrags in a big pet

All Ueffschi, president of Fight Bakey International extensions that his company, by Usaming protein on its 35 emulators—ex opported to "comp holes in the sky—award 35 million liters of Led. In 35% alone, We may yet see the day when all commig and certification of ani ne and milary plate are accompliated on immufacts.

In ganinal available there is as in autempolities an additional and very sensus ailitity problem Reseal Nursion reports in Flying magazine. Pleasure thyrig the worst category is by some calculations (an limas more canoperous than driving a cer. That's unaccessible.

Inclead, it is: Reter flight training water simally help. Though costs of advances simulations thay can run up to serval me tion dolaring area officion griff or wedspreas use in general events wider set and talk generation of the server based water parts at 37 million that is unless an average of a 37 million that is unless an average users that that it is probably average users at that it is probably

The man pertra that sexualize tearing is infact better in many ways that actual tippet time. The instructor, for example, can fusce the flight at any point if he sees the student, plot damp sometime among it has become possible to 'back up, and ty again it landrage are a problem, it be comes possible to practice only landrage, whou takooth

#### ILLUSION AND REALTY



a watchful eye on the processings. Whether the requirement will be waved or decreased mitterfulue remains to be seen

Server the semialtor rise? In each an expensive machine beginning price start out is employ antibiotism of content-priccedures trainer and then ellight-instrument trainer—before graduating to the real semidute

A cockpit procedures trainet, for instance, may be only a cardboard mockup of a real cater, but it can termining the student with the procennest of the instruments and casteds.

Pagh-restancent transes usually do ret have the vascall capability of the big simulary and may have only two or have cagnets of moder capability instructed of six. The dot world stances init transer – which calcitosted is than it britdly sits year – way just such a davace. The lack of you might prick for result of he most disregeout blogs black which her hold bit year was pay trach a davace of he most disregetory black which size which her hold bit year was apylying, black who her phild on 1 size asything, black who her hold on or in relation, deriverse of log, clouds

In one of the more spectracial exemption of all matters, nearely draghters in the exteopolic work out in two separate 12 movies domes. Each seas the other's plane in this workshaler and both is sole to som, dive, and do all the serebalics necessary to bong himself into the bed position for all packing the adversary secret, or to dodge a series. The intertainties to 2003/ real

Every movement of the controls in one craft, produces a conseponding change in the astitude and position of the craft as seenin the window of the opposing craft and as revealed on the instanted panel of the base melore the diverginary move.

Marc Listemen, an expansificad existence helicopter price who had flow one of findea crist in such a digityfit may be came out of the experience in a sweat. Whi at poperidal effer: "architt" more so much as a peel/hetter

The major is becarded more preventing on yorks, it will also to work being down in the aesthetaministics that the set that chan into address of manufacts statements software measurements to the set of the curstor mostles of terrain may be built more set and a set of the set of the moved and advers the target program moved and advers the target program moved and advers the target program moved adverse to the target program the adverse to the target program moved as accord advers the target program the adverse to the target program the adverse to the target program and the accord program the adverse to the target program and the accord program to the work the target target program the adverse to the target program and the accord program adverse to the target program adverse t

This model board approach the upper been approached by the new contract approached by the new contract the crose the parameters of a set of the ord as semicating local and set of the ord as semicating local these been elisated next the compared memory in can and change of the semicin from any angle and change of the learned infom any angle and change of the learned infom any angle and change of the learned infom any angle and change it has a write in the ord memory. The organic Calls had only

nightime capabilities, the points of light being relatively emple to accomplicit, but present models can produce full cost deptime images as well. The dispiral images are still not fully reliable, they are thylated memoriting libethildorfs.

Fortunately, it turns out that empirits, which have lots of parman between such as parallel lines. But surfaces, bythis and to on, are simulated very wait, while threes and other ouch testares are harder to do. The works out ubilitationly because pélots of high-spead another see this detail on the cound between aspects anyway.

Tokout park of this revenues the ringes as percented on the mean status. The second second second second second revenues the second second second second the observation of the second second second coses with the over increasing catality more register revery size it is knew the second more register every size it is knew the second revenues and second second second second more register every size it is knew the second second second second second second more register every size it is knew the second it is use related second second second its more related second seco

In the simulated sporty of the future mata-below will notice checkly approximata below will not the checkly approxibated a new stars of backaria, play golf or tanning beings a new chick holmet of submatina, or perform a deback belowinghait oparation, well learn to save time, money and leves to functing in DD





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# FIRESTARTER

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Invision effort a while Andy picked up the hear rain

"I word say fait out that I don't believe you." Invised finally. Not with some of the things that have gone on undersower in this country and then come out. Latis just say was hown is convicted the with

"I don't their its even me that they really want anymore. Andy evel. "Maybe it wills once that I think may ve shifted largers I think its Charle they te shifted largers I

You mean the national government is after a first- or second grader for reasons of referral security?

Charlies no ordinary second-gradet Andy said "Hermother and leare injected with a drug that was coded Lot Six. Is this day I don't how exactly what is was Some and inflammatic grainful in secretion would

be my part guess it changed the creations some of mysel and the skyl, take maneed Wpopsed how chanacteria and the charts, and they read it some either, charts in guess that disc called a mutantic some reason the carry, or if the charge field or called a shall be a charts in the case of the some shall be charted in the carry, or if the charge field or called a shall be a chart of the some shall be a shall be charted in the carry, or if the charge has caused her to be strend about her called a shall be a single shady her, see if they can figure call while shady her called a shall be to a single shady her called a shall be to a single shady her called a shall be to a single shady her called a shall be to a single shady her called a shall be to a single shady her called a shall be to a single shady the to be some shall be called as poptime.

What is it she can do? I iv asked

Through the kethen window they could see Norma and Charles coming out of the bern. There was rath color in the cheeks and she was talking to Norma who was similar and lookitho.

Andy ead wolly. She can light fres-

Wat so can L Irv said He set down again and was looking si Andy in a pecular, cautous way The way you look at people you auspect of mechanis

She can do it samply by threining about 1\* Andy such The tachnoor name for its pyratowasis its a patient like teleparthy telekinesis or precognition – Chatleh has dight of some of those as well, by the way – but pyrekinesis terruphneer with much more dragetous. She way much afold of it and shear right bole. She can I allegar cartholis if. She could burn up poor



house, your barn, or your front yard if she set her mind to it. Or she could light your ppor <sup>1</sup> Andy, smiled walky, "Except this while she was lighting your ppe, the might also burn up your house, your bain, and your front yard."

lev freshed his beer and stad. "I thrik you ought to call the police and turn yourself in Frank You need help.

"I guess it sounds prefy rulty doesn't

"Yes "Invited gravely. "I sounds nutty its anything I even heard." He was sitting lightly slightly tense on his chair and Andy thought, He's expecting mit to do some there have the first character I get

T suppose it doesn't make much anyway. Anay said. They'll be here soon enough think the polce would ectually be better Al least you don't furn into an unperton as soon as the polce got their hands on you.

In started to reply and then the door opened Norma and Charle came in Charles face was bright, her wes sparking "Deddy" she saat "Daday I fed the---

Shy broke all. Some of the color left her chasts, and afte looked narrowy from inv to her father and back to the again. Pleasuse faded from her face and was replaced by a look of profound means.

"You told she said Dh, Daddy why did

Norms stepped forward and put is protective arm around Chishes shoulders first what's point on hele?

1 don't know Irv said "Whet do you mean he told. Boblo?"

That's not my name she sold Teams had appeared in her eyes "You know that's not my name

Charle Andy said "Mr Mandersknew something was wrong I told him buil he didn't believe me. When you funk about it you il underentand why

Techturaterstand anyth— Charles began ber veice reng shotlertij. This sho boke off Her head bockted stoleways in a pocular latering getzue, alhough as lat a any of the offnes could let. That will be stape amply dataled for coincr, it was lite watching some nch layad being pound autor a petter.

What's the matter honey? Norma asked costing a womed glance at Irv

They te coming Daddy, Charle wittspered Har eyes wate wide circles of fear They te coming for us."

They had endexcued at the control of Poole 40 and the unrunneed blocksporead invited familed deem-on the Matriring Glon toes maps 4 was marked as the Old Ballings Read Al Stansakt had finally coupting with the sist of the ane and had taken over guidky and decarely. These were sokered of them in the cash Madrig op the road taken over Mandon's piece and a text over a latest overy familia plameters.

Norvite Bates had handed over the rests.

of the operation to Al with genuine relief. and with a question about the local and

"We re keeping this one dark for now." All told their roadblocks. If we don't we'll tell can't handle them with obteen men, we carit handle them. Nore

more He knew it would be beet to take the here an unfortunate accident as soon as they got him. A fatal accodent. With no bluesuits hanging around it could happen that much sconer

car turned onto a dirt road. The others

"I don't understand any of this Normal said Bobbi Charle can tiyou caim

You don't understand," Charlie said Her voice was high and strangled Looking

I think they re going to kill you. Daddy

Kill you she repeated Her eyes were staring and glazed with penic. Her mouth warked fractically. "We have to nur. We have

Hot Too hot in here

He planced to his left. Mounted on the wall between the accive and the sink was an The bottom of this one is pleads ned clevil with a prichtor's was growing and mopping

The flight in the thermometer was slowly

Yos that's what free warr in do, she and "Kill you kill you like they did Mommy lake me away I won't I won't let it twooven. (

"Charile" Watch what you're clong!

Her eves cleared a little link and his wife

But Inv had seen Andy's glance at the was hot in here now Hot enough to sweat The fluid in the thermometer stood rust above nmety degrees

Charle's shoulders. He looked into her eyes "Charle- do you think it is too late?" How does it feel to you?

Yes," she said. All the color was opna

You can stop them. Charlie, he said

But Didths it is bad 1 know it is 1 noved

Yes, he said Maybe now callet or be

Yas Andysaid it is Never kidyourself

They looked at each other eye to eye

She said "If I do-something-will you

The question hang between them

Charlie he said 'Ill always love you No matter what

crossed she form to them "I think I got some tall apologizing to do the said road filistand with you riyou want I got my deer oun. But he looked suddenly facttl-

Charle said You don't need your gun She sloped out from under her tather a hands walked manuality armos the lot-

After a moment Andy found his feet and

terror He had heard that out of desper-93c0 even a rablet will sometimes but and less meek nature at the instant before it.

stand up

He put he ave around her shoulders and



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"Hi, Andy," Al Storrowitz said, and he smiled H Charte Ha hands were empty but his ocer, was open. Behind him

"Go away Charle said Her voice was thin and high in the cool early alternoon

Andy He looked at Charles. Honey you

Al strugged and smiled disamingly Fraid I can't do that honey I have my

Andy spoke and was a little supprised to find that has voice was completely steady. I advise you to do as my daughter save

strancely yellow table. Don I make me do

are trespassing The said. "I went you to get

"I clonit care if they re wanted for sessasmatting the President, Irw said His voice

"You do unless I woke up in Plusses that and you better get high steppin', maler

In come padel Norma caed

denly began to stir and move, like kelow an investile tide 'He looked down at her and saw by tool, to small now to shares

coming, O my God it really is

Get out?" he shouled at Al "Don't you

The free men at the end of the porch auddetly charged at them pulling them them yolled Just stand still Handa over

of standing on a subway platform in New

6He was almost hysterical with anost and disappontment Two people slept in that bed Blood bairs on one allow black on the other tire! Goddamo it all to ball 9

supporting posts. Norma screwmed and ful A small. Mona Lisa smile had touched

Charles was turning back toward Al Sterrowtz again. The three men he had

Acother pun wint off A window shat

Not the cirl<sup>1</sup> Al shouled "Not the gall

diseased toward the celling through the chaps Then surreone tried to pull him a different way He felt like a top of war tope

Another our wont oft and suddenly

sational tone of voice "Don t-

It was impossible to tell where the Rames

Andy fait ther soft rush of heat again, a

ing silently under a transparent caul of facedown becade the third car He clide t

quah the fames. They were all going to

quackly She's never done anything like this

"I'm all right, Daddy. Charlie said. Her voice was caim collected and shangely ndfernt Perchnasckir

They all went up from the rater lister, when

Alls Ealtr-green Plymouth went first exploding with a mutiled whrm-rumpt

Charles' Andy should 'Charle stop

She said in that same calm voice, "I canit

The third car went up

Someone can Someone also followed itway Andy was turged again. He reasted, The rest of the cars work up than like an ear-shaltening shing of hieroreckers. Two of the floating mini were tassed aside like rag chills by the concussion, one of their pappened with bits of asilety places.

Dativ. Orly smrake loss in the air Beyend the drivensy life for finite and fields invision and without brough the heat shummer as it recording in horizon these theorems and madily everywhere. Clocking citable 32-d denty fines of them explored into flame and vectorubing of balas of his with least to collepte on the fire side of the dooryaid "Charties and in dyn charter 35pt of"

A trench of the range across the doorword on a degrant line wery det blacng in a angle attaingth line us if a train of gunpowder had been laid. The time teched the chopping black with trivs as based in it makes feary may around a and sudderly collapsed revear. The chapping black whoatther into lines.

Chikshe, for Christ's asks?

Some Shop agonts pistol was lying on the bit of grass between the posit and the bilancy line of case in the dimeway Sucdenly the carindges in thegen to go off in a dama of sharp clapsing explosions. The guin igged and Topped bearrely in the grass.

Andy slapped her as hard as he could

He's hald nocked back, her eyes blue and socart. Then she was looking at him, surpresed and hurt and dazed and he suddenly fait enclosed in a capeule of with building heat. He took in a basahol ar that bit like heavy glass. The hars in his nose felt as if they wan company.

Spontaneous combusinor he thought fitt going up in a buist of spontaneous combuspan --

Then it was gone

Charle staggered or her lost and putter hands up to her face. And then, this up the hands, came a shift, building scream of such hanni and diamay that Anidy feared her mind had chacked.

Dasaacioneeneene.

He swept her into his arms, hugged her

Shift, he sed 'Oh, Charles honey shift The scream stopped and she went imp

in his arms. Charlie had fainted Ancy picked her up in his arms, and her head rolled imply against he cheet. The airwas hot and inch with the small of burning galabite. Plannes had already orawled orbits he lawn to the ny trefail impers of the bagen to climb that switch the against of a bay on in diagnit business. The house was poing to go up.

In we learning eganst the backen schen doch hieling spaged out Norma knich bestählt im Hellhaut been gird abges her dow and hiel stelend of hell ham and dom sched black all at hiel ham and down sched of held back all at hiel ham and down sched of held back all at hiel ham and down sched of held back all at hiel ham and down sched of held back all at hiel ham and down sched of held back all at hiel ham and cauld bind the veget lives gives were participated and he was breathing fas

Andy took a step toward ittem and Norms finched backward at the same time blacing her body over her hubband's body in a protective gentue. She topked up at Andy with stew hard eves

Go away she hissed. Take your monster and go away

"Latis get him off the porch." Andy said He had laid Charlie on the grass beyond the dooryard. The side of the house was builting now and sparks were drifting down on the porch like big, side inserting infline.

Get away she said harshiy 'Don't built him

The house is burning. Andy said "Lef me help you" Get away! You've done enough? "Hush, woman Lend me a hand Frank "It's Andy he said

Wasteek your amm is it's gatter hot lives: Applied windows action sparse onto the perch as Andy half oragated the series and into the doorgand These was anothing left of the observes Charle had set on fire but a few charses benefit and securate doer achimatingthe have been active accurate dotted and have been and securate doer achimatingthe have been actives the operated restrict. How had been created

Set me down by the bern Try gasped I want to talk to you

You need a docsor. Andy said

"Yeah 11 get my doctor What about your grt?

"Fanted He set try down with this back against line barn door try was locking up at thin A little could had only in the face and thic bluish cash was leaving the tap. He was tweeting. Behnd them the big white familhouse the had stood here on tay little familhouse the had stood here on tay little

There s no human being should be able to do what she can lirv ared

That may well be. Andy said and then the locked up from it v and directly into Norma's story unlerging to the "Tist then into human being should have to have ease. Total pelly or mutoular dystophy or laukoma But it happens. And it happens to children

She didn'i get no say invinoided Shill looking at Norma, Andy said. She t



## BUY BACK SOME OF THE FITTIRE



INT MCX ISSUES NGOME NX 12 usid alter March, 193

romore a monster than a kid in an iron king

"Im sorry I and that "Norma replied and heuse is burrent down and people are

is your button going to be all mon? I've

Well listen Here's what you can do if behind the barn-

Thy not Denit get into this any deeperi

No she sad huskily. No I guess not

I feel I do, it's said. And when they

Oh yes They I be back. You just

when they show up here all I know is that

Thank you Andy said queely

ple again

She planoid over at tem, through tem

Set her down," Inviand "I want to talk to

Asky carried Chattle over to where ity

Way listen to one button' Inv and Those men meant to kell your daddy You

Yes. Charlie said Her ever with still deep and miserable. But you don't get r. It

Your daddy's fine. Irv said. Andy said stranging sensation being enclosed in

I m revel going to do it egain, "she said

Never, she said with quell emphasis

But you will I think. Inv said, and he looked at Charle with such deep compas-

Ike a yow made in secrecy DO





CONTRACTO PROM PAGE 60

million of vehicle owness, and partupes a hundred million residences and to reantion their habitantia of a transfeed bity other observing with most analysis with our research has some relevance to the reas workd and that the future of that one server independence. If other tory years all use workd and that the future of the research independence in a feet to years all use that particulated are in their tory allow the report of that of the too well store. If other work will store on the two hours taken.

Over Cain für Dragstmerz of Ensign hang: Hyber Of course can halp that is papose lives of be constant halp that is papose lives of be constant of the coursisy notwith standards, there are anone extraction introl framework in the COU who want wave magnificant base of the COU who want is worked an apphilosing base of the COU who want is matched advanced in the world Franmached advanced in the world Franmached advanced in the world Franmached advanced in the world Franhana strateger more have been shown the base at the partners.

Orny: What can SERI assill do to move its discovenee into the manufactolacie?

Hayes, Let me answer that with a specific example. Most ordinary glass contains ion which elasorts some of the surger. Low-ron glass can be produced whan high optical transmittance is needed, but such glass is very exponsive.

We discovered that the undescable opcal properties were due to incri in the ferrious size A cheep and simple procedure during glassmaking can transform ferrous incri into the ferror size and the resulting glass between suit like low-mon class

Lastiyaanweerimeenneel wehundwol My housand dollars worth of this low fancus glees four a major manufacture, and we glees it away to chorers of times acress the country for use in adder collectots and optical transmitters. In return, these times will seport to us ery undeerable characteristics that is may exhibe

If it proves testistencory we will have docenteral a disate way to make high iteramitance glass we will have dismonstrated to a mayor glasse manufacture that is existing assembly insis can be easily modified to make the new product, and we will have shown dowers of pottential uses of the dises that this imprevence poticit can dises that this imprevence poticit can dised the at this is the new

Over Let's more away from technology and the polices for a while When you were charman of the Solar Lodge you longed against linking solar legislation as "weekense" to other less palatable bills, the the National Energy Act and the Whothel Protectal Canyou are the social Whothel Protectal Canyou are the social

Heyes I certainly don't intend to be muc zlied. I have always spoken out when I feb shangly about an important issue and i will continue don'd so builton't as a citrizen. net as the director of a federal tability

Crearly SERI cannot doary tabitying that this sittle largest collection of solar accents in the world and we can snit don't intend to keep our varies a secret.

Owny, Is that likely to change if President Carter is defeated this fiel?

Notes that the second s

Las mel desinguiste however, balveces expressing one is wereal and design one a optimism solary-point of Congress should solar my were onthil workd undustrated to the term of the solar project is were term. But if Congress Should and Utilized bit of the signature main ways possible bit of the particular solar project is were been as the solar project is bit of the particular solar and the particular solar projects to the solar bit of the solar solar solar solar solar solar solar solar bit of the solar bit of the solar bit of solar bit of

Hayes Solar anangy makes serve today for lots of applications. Prisova solar design active solar hol weter systems, alcohol fuels loa-head hydropover, wood stores, and informits in good locations all make same now.

If this obtainly is is get one thad or even ups fifth of its onergy from the sum by the year 2020, we certainly can t athad to at around contamplaining our navels for two or lan years. We have to hit the ground running today.

Great There is an old one-liner. If you're so smart, why an t you rich? If solar is an attractive, why don't we see more of it?

Hypes WAL if the estation in the scope of (Teller, if the stock against as your casetion adjusts. Actricit to use is stocked all tably most to a stocked by a set of the all tably most and as automatily in the Northwest, and being antibility of a set of the Northwest, and being antibility of a set of the Northwest, and being antibility of a set of the history barries and as automatily in the Northwest, and being antibility of the of the Northwest, and being antibility of the of the Northwest, and being antibility of the of the Northwest, and the of the of the of the of the Northwest of the of the of the of the of the Northwest of the of the of the of the of the Northwest of the of the of the of the of the Northwest of the of the of the of the of the Northwest of the of the of the of the of the of the Northwest of the Northwest of the Northwest of the Northwest of the Northwest of the Northwest of the of

Notifies Islaid an unker othereg asstatcacey, and the stand stand of the sense, is of sample is so simple and offsches and other stand stand stand stand stand build a swelling today that lackad salar focuses. Conversional buildings should a low worther of and that there wont be much statisfic conversional buildings should be well stand to conversional buildings should be well stand.

Once: Solar energy may be patients and moral but is it cost effective?

Hayes Show me the construction plans for a conventional new home and I can generate

### SECRETS ENTRUSTED TO A FEW



THERE we some things that can not be generally islabilishing you apply to how. Gener much use danserved to how. Gener much use dantice and the source of the being decretions on the source of the source of here is the source of the here of the source of the source of the source of here of the source of the here of the source of the s

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Orem Why should a person who mitaifa solar equipment receive a lax credit?

Alter opport in the access industrial subsidies to conversional facts have totaled about one hundred reversity billion clothas and oaler deserver at leads an even break with oil and mathair. Second, to bring the microsoci notices interests of the consultativity of gruenos with the mathateconomic mathetas.

Let say you are tautory a new location orders and tay which address and electricwater hatter if you buy a series of an electricwater hatter if you buy a series if you buy the electric hatter you buy only for the hatter buy your local electric usity must also buy one runs each address but for news naces a proce signal that must built in during in water with an electric built are with the could of operating in much changes and change and a during the water buy out it that was built in a during the second perhaps the case of a during the water buy the change in water and a during the water buy and change lower.

The important question is whether the splar water heater is cheaper then the electric water heater plus the cost of the new investmentitle utility must make to DWW/1

The answer is yes But the regulated using manipplace down not awn3 you is price signal to relate this. So the two credit is a government instrument to encourage you to more the meatment that is in solely/6 best measure II gas and electro utilities were not requirated monopoles, addit tax.

Ones What is allowing the sets instruction? Hayes There's enough bitmer to go around The teaked government is to thim for promoting tax credits will thim dawing security or epitanem month to be provide that detection unit the credits inc. haily passed, others are now waiting to have taken to pass in able monthly credits. Drive passements: A one yield is monthly all drives in the teach of the set in a set in a set to googh to pass in able monthly. If drives the drives make the up of down wing drives the able to pass in able monthly. If drives the drives are been been able to any set of the month bitmetwork.

Another part of the biams lies with labor, Some of the early solar installations issues, some those some method isome wate lasticities backwards. One heating system in Boder was thread to function only at night. Both listor and industry are new semiculty addressing this problem, and training inchbates throughout the country are now carthem solar unstallates.

And part of the blane les with inclusivy Many aciar times wowed the market as I miticed to weathy and upper-middle income toks; who like to be vertalesome. So they

advantised solar technology as bery and daming it solar as to take the kind of pertables that will really affect the nation's anegy budget, it must be acknowledged to be rest one more appliance like is intrigeator or an air conditioner, and it must be person Several solar time are now adopting such a strategy.

Other: You have said that the home said and should be an energy product. Not on energy nonsumer. How can you common people of that?

Regist TheTill a psychologically wild politically interesting autobiot. Bootsets many in Cooperations are more interested in psychotion than in conversion. One staggets programs and the other bettingthomy of particle and the other bettingthomy of particle and the solution of the ment to address the best bit, the worth cells where he is personalized that army Canac Above The beam and that army Canac Above Tas beam and that army Canac when with sanchas. Dees concernation research the concernation research and that army Canac when with sanchas. Dees concernation research the boots.

Hayes It is vitally important to datinguish between conservation and ourstallment Cursamant means driving of https-free mice and so on Conservation, on the other hand, means substituting fluorescent balls for incondescent tax iss, boosting the fuel whitever of automobility, and results.


Ing your home. Curtainent tends to be unpopular and uneable, conservation tends to make papple more cardinatize and saves them money without requiring southcos or changes in theways. Our maternal efforts have probably focused too much on outsimtern and not enough on conservation.

Onto: What is the potential for saving through conservation?

Hype: Using only easing bichologies, we cauld im outermonry America on about hard isimizative last in a more vitrent scancer, much higher and powerkers, accorden, much higher and powerkers, accorden, much higher and power vitrent accordent, much higher and power vitrent accordent, much higher and power vitre accordent and a mose attacate task and on payments. By the year 2000, as since of payments. By the year 2000, as using a single according were built be accordent and the weather than it is below on a further weather for pay and be accordent as the weather than and below on a further weather than a below on a single accordent and the higher accordent is the higher accordent is

With new technology, the potential saving is far growthe We invoke a wearagie how to built in infigerations that use only one fifth as much intercharty as today's models do. No one markes them commercially hoday built am conditions that the advantage of the one markes them commercially hoday built am conditions that was a set of the one markes that a set of the one of the one markes that a set of the one of the one markes that a set of the one of the one markes that a set of the one of the one markes that a set of the one of the one markes that a set of the one of the one markes that a set of the one of the o

Hyper: A lattice we decide we are wing to make the necessary weeter more to pudane them. Toolsy photoscience costs and data them. Toolsy photoscience costs are boots are handled costs as a docted a gain the menaning sochristic problems at dwiright lattices and costs as a docted a gain the docted as interface and any doct data that any docted as any doted to bo built. This follows a maked any doct data that the social anisotic part that costs and the social anisotic parts that any docted parathetics anisotic term of the built. This follows and the social parts of the social parts and the social parts of the social parts parts of the social parts of the social parts parts of the social parts of the social parts parts of the social parts parts of the social parts of the social parts parts of the social parts o

What hading back photo-backs as the porture that they can be worn charger some of an work at SEP could lead be as a set of the set of the set of the set of the back of persons backers in they prior back of persons backers in they person back of persons and probably to necker back of persons and probably to necker back of the persons of debiasing particular back the memory of debiasing particular back back of the persons of debiasing particular back back of the persons of debiasing particular back the memory of backs on the back of the persons of persons back of the persons of persons back of the persons of backs on the back of the persons of persons back of the persons of backs of the persons of persons back of the persons of the persons of persons back of the persons of persons back of the persons of persons of the persons of pe

Oren Do you support the proposal for power solutions?

Hayes: SERI is not doing any work diverty related to that, and so I am not deeply invavidgebet about it My personal regaring of prestoral police today to that a's poing to be yetry difficult to pursue any interty office that requires an expenditure of earthy billion dollars baloe you get anything out of it. Verween even on the normal4c projectants for the octol of power from starth statelistic prove nocurate- and this is very fair Yom barring assumed—1 think we dan make the same octo goals with fewer risks by using terrestrail scatter technologies dates. To you think that as much tederal meshy is being sport on large cateralized projects such as power travers and loo tails on decompliant?

Hayes: Helonically that has certaply been free in recent years it has started to come into better balance although I think too large atheaten of the budgetts skil focused on sources of electricity, and too life on chamical fixed and solerate

Part have mere sety unserved that of the policy and wave beging the local of the policy and wave beging the local of the policy and wave beging the local of the policy and wave between a set of the policy and wave between a set of the set of the antiperturber intercent and the set of the antiperturber is the policy and the set of the antiperturber is the policy and the set of the antiperturber is the policy and the set of the antiperturber is the policy and the set of the antiperturber is the policy and the set of the antiperturber is the policy and the set of the antiperturber is the policy and the set of the antiperturber is the policy and the set of the policy and the policy and the set of the policy and the policy and the set of the policy and the policy and the set of the policy and the policy and the set of the policy and the policy and the set of the policy and the policy and the set of the policy and the policy and the set of the policy and the policy and the set of the policy and the policy and the set of the policy and the policy and the policy and the set of the policy and the policy and the set of the policy and the policy and the set of the policy and the policy and the set of the policy and the policy and the set of the policy and the policy and the set of the policy and the policy and the set of the policy and the set of the policy and the policy and the set of the policy and the policy and the set of the policy and the policy and the set of the policy and the set of the policy and the policy and the set of the policy and the policy and the set of the policy and the policy and the policy and the set of the policy and the policy and the set of the policy and the policy and the policy and the set of the policy and the policy and the policy and

Latitud revolution just as the of historium shrank the planet and reveluped is often a before that a solar Antenca would almost cartainly be more abroches than any of the fieldy alarmatives. Ny tunch is that that ay noutreal social well lead the rest of the rebon into the Sole Era. Formers will an to the word, the sun, and waters to supply all differences.

The Internet of the order will be version of them periodical as in proceed before musicalitons and involuged to be provided in the transferred whenever possible from public transferred whenever possible from public transferred whenever possible from public transferred with the Personal community of the second of the second community of despite the second community of despite the second community of explain the second person second community today's costs Petitic barrapertation systems will be fur more comman.

Industry will produktly relocate to take advantage of axalable energy sources over as it carrently tands to became close to coal fields and dame. Pectores will become much most efficiate in since energy case. Industrial products, seen as repositions of tise-energy needed to manufacture from will be designed to be more clurable and more easily recycled.

All in all, I think solar America will be a rather allocative place to lea in fact die where I inferid to raise my daughter DO



Genetics and / 17 1250 Aut of the American MIC 100 TO

# NEXTOMU









CARTOSRAPHER OF CONSCIOUSNESS--If you christed inside a hall constant

FUTURE CARS--- The automotale is deald. Long live the automotale? Not so, says

SPECTACULAR FAKES- Are you oursiged by the skyrocketing cost of gents?

INTERVIEW-Work expands to fill the time allowed for it. With that emple lists C

SCIENCE FIGTION -- New month Only presents Robert Scherburg's first new story

### **A FATHER'S GIFT**

the ultimate this between the modern world and the world of a man who had changed whelmed by passion 1 was to be the first

The ampliance the blaspherry of that choose shownes me now as I all here in up for observation. No. I had to do it alone

under the proteinse of working late by midsucht I was the sole infiabeant of the

I hart looked up the catalog number of the cottin with the focasy x-ray plates and in a dark pomer of the room, powered with dust a few continuana thick. It hadn t been tracted at years 1 stort had the offer creared away and began to pry the lid off

Refore mellar a muttiny wapped in the tired failed to notice that the bondaces were

In swe. I stood leagen unable to make I

of the foot of the aspent saccophoous nearly out of reght I found something litel had had a placerd bearing the charge against him naried to the Gross Joseph

Since it is written threefold, in Greek Lat

I slowly replaced the lid nearly over come with errobon. Had I core too fer into a region where it had no business intrucking? I required to my office, caming

But shill could n tiet it be I recall attend

pert in formalo medicine to run a total blood analysis on a freqment of wood I happened to have Of course I told him

I don't know what I expected to learn but I couldn't help mysel! I was so close to hoursed me as long (or so I thought) that

I soon had my friend's report. Halfway

photovic cells absolute, postive disprove Two thousand years ago however it was a thought when I read the analysis

Such a death would have destroyed the

drug triatment for loukering, 6-mer-Captopunce! As if He if been on chemotherapy and was beginning to suffer a

/ saturation numb with disbehol. It was faritastic hoax? Was Professor el-Zam

knew what I had to do what I must do if I was to know another mament free from

When I had begun to out the cloth had been in the form of a heavy writtpert to the blades in fell in on itself as if it con resting place of a man. But there was some

load foil martiatied in Jasephis letter I

surprise. There was no cloubt now, this was the coltin of Jesus But-where was He?

chanad bandages and the melled lead sheets became clear in my beardered ture of the covered body to reach at least laad mat would have impregnated the bandages, footing the s-nix plates |

seen with its incredible tale and the an-

These found Christ DO





By Dick Teresi

He was a bright spot in an otherwise dull there "It's strange that of all the ecsentrats ruch a panel and Arno Pengins one



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But Percess was cook. He admitted that switch your terms he axid, "from one form

excess of cliffs. Penzies seed "But he

Other speakers at the affair were less convincing E Linn Draper, Jr. a nucleor antinuclear tour last fall. Desper and the

Dasper treated the nucleor waste assue



coord line. He recented a colleague's plan suitzeses and check it with Eastern

Inter 1980s, an extensive web of scientific cooperation has grown between the

To find out what a been happening the USSR's top space scientists

entry phonon of the mission to tak to Conver the care to be missions with them pust spoken with occarronial Watery Phytems to ensore Phytems DC Staberko asked had imperanced many strong sensations with ormaling the Staberko between Sechand the sensitive the sensitive of the Staberko between Secharrow and the Staberko between Sech and the sensitive the sensitive of the Staberko between the sensitive the sensitive of the Staberko term above the sensitive the sensitive of the Staberko term above the sensitive the se

And row space tries for Pyrom here become shinds during. This memory and the bucky indiced any recession at oal on bucky indiced any recession at a fill ward (started work) in a pace makacene that made it possible to the electron constraints on the time a memory should be approximately the started electron constraints in the time a memory can apple to a pace, human start a cross traphed to a pace, human start a cross the papeer may. Canartee mergebaged



Ivan Korschenser No fan of Volkarackete

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Back hats in the U.S.A. we wore a little surprised to find cut what Marwin Minsky the founder of MIT's artificial intel genoe aboratory is really live hits reputation is



Mahori Mirisky Wants to get og of up

that of a lacciazem spacetor who despessos the presso. But we spent a step in our offseer security and it luma out that has lower mediate of all acciment layer applicable Segan, whole many benefase appendix of because of the high public vasially. "When needmore like htm." said Minsky Whan I. that a kkill, which are many who wes offic to represent all color stores. Hai name was a block that do not many who wes offic to depresent all color stores. Hai name was abler to haid the more many scient."

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to devoce simulations experts as much as possible feeling as far as acaetoe febror is concerned. Anybody's guess is as good as anybody also a "

The first and possibly ammgatil explomotion for the involvement of attractions that the systematized by hard were and by acaello facery. "When they make the angle to the moon. I had to have implement and to the moon. I had to have implement when the hall they do that. Otherween, it don't were know how the phone work." He adds that just throng to understand anything removely activical rease from its handladde."

To would not be fair to appet actors to how more than a porphetic uncertained and port that the porphetic uncertained and port to ensign presented in any specch offitionapage of concerne than as all boughts is the conce that is seasured. August the magnetic concerne than as all boughts is the conce that is seasured roughts from one present a concernent that can appresent a concernent that can appresent a concernent that can be

Apropos of Solarn 3, he considers it all but indexent the he was playing a scandar who have on another world. Acting a soling in the maintening "Human behavior doesn't ohmerge and just as you can protemposed of a thousand your as protemposed of a thousand your as protemposed of a thousand your as probarno way you project yourself into the future.

People associated with Saturn 3 and browledge that Double worked with spirit and disputse and in shower in this level performance. Box modeworked influences with no despire Subpet Double influences with no despire Subpet Double informance the since of the central of performance that the performance of periods and any more that the permay challenge who boxed with the test of the cause of quality coverse the trian is in of posed.

The Dougles has made some how senton-triction lines including Averty Trousance Lasgues Univer the Sais (1964) and the castooney Saven Days in May (1964) with cheraceristics humble the offic antibiosity for world at Lascette of these lists to the most who include some patient with the register act that the some in which wenyetic concentration on the the on-the double. Dougles portified the freewhering Skel Land with WRI Day was attend on wheth earthware

He had vision, maybe even gettus -Douglins suggiotis, thus the visio event gettus ties was meetly menorable in the corestruction of the Kaucius and took any sudgiotis mays the he has encountered very few timenalous who have been as decided to the truppings of lottene finition - with the resultie severation of Samirey Kutznik, for

whom he made the concerningery elements praities of Glory (1857) and Sparticeury (1960). Though the setter complement of the director knampaging goo' Kubink's fail of with') he adde ther Kubink's data failed with's he concerning faculty for detail, as marepides in 2020. A Space Collegency, and an overset is genue, shortiset theotor. (John her be concerning faculty for there is a genue, shortiset theotor.) (John her be concerninged body).

By a hardware cows him - and schilde tration has never captivated inin (1981), the lights and trings firing all over () - he ofmately reveals himself to be a closer behncost. Despite the of he has cast upon the waters of science fraces, Douglas is arrived by sciencies regards.

"Christ is biocrisital, "Heating, "Weating you think of Jakatamitane easi water such that the second second second second second heatings is a contrast The there was the site of U.R. (Dessume Driversel/Addee without easi though a title such all date. Thu go way the helt back and—Jeous when 1 think how long ago they secand modern provanging). The summition heating"

To the survey "incide before before budget comes has one model by and allowing in that designed and the survey of the survey in the survey of survey of the survey of the survey of survey of the survey of survey of the surve

Surprisingly, Dougles a advocacy of progress is not the final paradox. There is another room abached to the actor and his room SF firms one that dominates the need to an improved relationship between sciences opency factors, and the original.

And which appliences may emerge table several Status? and The Find Counciliation canno less should technically than before the several status? and the Anado to describe house should be applied to the several table tables and the several tables and table

So it is Perhaps one day Hollywood will learn to por hay technology in a fashion that will permit viewers to share in the breathtekng fun DO

# NOBLE CROSSING

# EXPLOR/ATIONS

By Kathleen McAuliffe

In the special meta-special meta-special and population over rough and population discretions of the spectra of the spectra

The apped self loguide experts a st belanding ones body weight against whice pressure its closest servectify courser part. The wind suffbaard weight set us a loguide choses for de Bosniy's kleest conquest — the containing of the Stering State. Although only 36 kicmeters as the between Altaka and Stering proved to be here most phycogid updated from induceve of his carbair As de Rosnay recalls on the first antiworssity of his creasing, "Nonmeter waiks, is suspective, of four diagness centigitatie, and gales blowing drose as commond to tigger my cloubt as I philiged my hand into the water for the first time."

Binamitys Resno had harland assubbar detroptio histeroo fi ky nabu interess / biotamoti nabusco fi ky nabu interess / biotamoti nabuscha a de Roansy with diajtriasis minimo plaka what here dotta are stacket against him He laughs, wata no yourishi capace, witemity instang within what authors the deterministic and here the state of the state of the state wata no yourishi capace, witemity instang the what authors are used and pool at use of the state activity of the deterministic elevent as the state of the state of the state instantiant and the state of the state of the state instantiant and the state of the state of the state instantiant and the state of the state of the state instantiant and the state of the state of the state instantiant and the state of the state of the state instantiant and the state of the state of the state instantiant and the state of the state of the state instantiant and the state of the state instantiant and the state of the st

In May of bit year de Revroy set down to diather Berry masser plan. The strat transplate locarly three and a half mante of the year, the rest of the amening locked in res if a August the autor tech me minute callel each ensuing day For alleft reasons he would have for the tea deadline incomentees between August 10 deadline incomentees between August 20 deadline incomentees the set of the tea deadline incomentees the set of the set of the set of teachers and the set of the set of teachers and teachers and the set of teachers and the set of teachers and teachers and the set of teachers and the set of teachers and the set of teachers and teachers and teachers and the set of teachers and teachers and teachers and teachers and teachers and teachers and the set of teachers and tea



De Rosnay, dende he wird santhpard fores is to a wrafter broadcast on the over of her cession

An the additional mick of log Begenbeck items comma planed in their cyclin. This would give hant barely loar mosthe is formaliss a plane. Minard preparations would be nacosary — emissiony with formalis, plant and sympatrix tarter, and regional maps, chooring and builting adds and backing, precior and builting adds and backing, salidity systems and old North all control against the cold avert as loarned against the cold avert as loarned and the tarterial cold avert as loarned and the tarterial cold avert as loarned against the sectors of boxed governments

All stirt fold 18 generations was considered and the second second and second the point of the second second second the point of the second second second the point of the second second second second the second second second second second second Research the U.S. Salate Department and Research the U.S. Salate Department and Research the U.S. Salate Department and second besearch the Salate Second besearch the Salate Second second second second besearch second second second second second besearch second second

Even so then news awards moles has counter yian more hazarobaa hava he had oogmahy anto-pated. In the award alan memperoy, of Anany social not dapand on help time either rabon. Worsewer he adamter of the social norm help would accessed belowing write. New Would accessed belowing write. New Help would accessed belowing write. New Help would accessed belowing write the would accessed belowing write. New Help would access with the social memory and the social belifting the write approve the social memory as three hours (pierce 40 percent) as the top help help more property in the social memory as three hours (pierce 40 percent).

While tearing in Hawai, however, do Roomay latened a new techniciple of wind aufing completely unknown to Eucopeans. Hawaren wind surfate won fouch their boards whan the wind force is under four They'right the taincluid chamen. course smusing, but their chief objective is speed in cheep seas. Consequently they have technically included the boards either created object changes direction by balanciing the mast lower their form of back but hey a play of the feat that de Posney liters to waarskring. The result. Speed cloubles while physical infort have.

With less than a month to go below the planned department of the Restry, decided it was time to confront the Benrig Alfar the consold waters of Hawaii. The temote willing of Walde Alabia, was a readval, and he could barely make out the constinue acting playbeach dominated by Albarrater of the

The tip is the service work discovered, the mountain that becomed all account the strate toesais a natural wind turnel. The gates occuled their remains all the dameet narowed to manual than one occasion his skulbagers based works the thepset to pilk a wep of straw as the launchied from the baset. This was noted that entertaintain for mixing all started were taking annualed by the astronomer than the started by the started in the set started annual by the started in the set started annualed by the started annualed by the

On his third day of trais, which he was see kitometers offsense an imposing black mass with a middum cased tas in subdenly puted up out of the water 30 meters in from 0 hm. It was an Occu while T ve never tarred annual so fast in my Me. Taked the Romay. The Distingt of the Industry of the Industry Company. The Distingt of the Industry nassed the scene from the shore. That ever runs the whole willage know about it

To accurate his herde to the coal, de Roanty begins training without his waterproof glowes—a wate precaution, as take would have it. Over the next ten days his tested and perfected his equipment. Both physically and technically he was ready for the big clay. Now it was only in question all the whit water containing.

Thorsday maning, August 30, 1979 Defleenvy broackast in fluesson michaisage own U.S. sado sinton NAME, wenning toops in siterius at his michaiding with to michail and the siterium siteria and the siteria siteria and siteria and siteria and what would have heppened if I was mis used would have heppened if I was mis served in the runders "can without layers for an American lacomatistance card? Lean lace the headine snow Schamp.

At to 15 val incompanied by the 5+ innot rends on of For Hes subty Good Failer Ge Romay texter is indust and set sall on the high saisa. In a waterprovides the current his passport the Russian respone to his letter. Stop in cash, clarings three and information

The first part of the purryey was amouth going. The ocean was calm, with includes and a blowing at solution agif kinds. Even asthe coastine receded very guickly Byncon he was about 15 istimates from the larger pathmeter-one of two islands that all 600.



meters above set level along the International Date Line. To which the rough cursects and ections had bom around the office, techesoled up in that ap possible. As the set became couples he test al hard time minitaining his talence. His hands grew herey from the obit buck when he greved to the glowas tucked up in his bek. — nathing They had shape into the water.

This was considerable cause for elemienough so that de Rosney contemplated terminating his journey at Big Domede, which was at least on the Soviet side of the shall in the end he decided to continue on course pass the two Domedelle.

The second vision is in Sevel water that a water is supercharacterization before the ten brock in the Paulity water and the brock is the Paulity water and the water of the charmet. The wind paired be water of the charmet. The wind paired be water of the charmet. The wind paired be water of the charmet. The wind paired the water of the second be for the charmet is wind maintained a parallel because the core of bearst gained with an tomatmost an charmet water of the second building costs?

The approaching monitories on the Bolmin coast were answiring light. To de Record beine have a summarized to the series of Record beine have a summarized to the series of Record being the series of the series of

City a few kilometers of the Siloving cost the wather mesoperied blowing many packby beach formwise large and many packby beach formwise large that the cave of the door toget networks that the cave of the door toget networks packs and of Boarry properts to the face snapping back with this aim of the total performatione accelerator on the salah dotted oght hours to mission the salah dotted oght hours to mission the estimating the core menters. Which hou cave and the total hours hours to the dotted blowing hours to the salah estimating the core menters. Which hours

His fears was quickly dispelled two hours later de Rosnay was climing royally on selfere owier and twen hut and shouling volks toxes to Anardy the sho's ceptian, who spoke impecable English

Butting the Bering Shait on a work subtract would been to be enough of an edwatuse for any individual in Hetme But not for de Rouge who has als the keys on more distant goals. Would you believe a 4.500 Heimenik ; youthy from the Mairquedas Islands near Weit. Io Head the consistent with prevaling winds in the say consistenty, 'it shouldn't take more than about he oand a hell weeks. Do OMNEMONICS: How to remember everything Save this page, just in case

# COMPETITION

By Scot Morris

remonic devices are memory ads In March we at nounced our twelth Competition

subdested matrix pretixes, horse parts poker hands milliary ranks Whin these submissions were often ingeraous we

Mentoo should be made of once rel

Good pupils require speedy learning, po use the library helpers. Book class-Literature (8008) History (900a) - Mark Peterson Rocky Powe, NY

Celsius equais foolish nonsense because Fahrenheit makes temperature the best Formula for partverting Fahrenhol to Celsus Colsius equate live nexts bracket Eaborshet meusthety two bracket

All chaperons must providuate have had sex Belocadal classification of man - Gred Freeman Newman Ga

OUK EVIL GAINS OPEC member

-Bran E School Brookfuld II

Nice partners place pestiari cuiety mermany states, always befreeding neighboring Yankess. The ten Canadion

Wima's apple jelly makes men adore um Verais hot terrates prei the force pan Bertheis Issagne just give her gas. And learther whip his class. Help Roy steacher

Denni okwar moarronic makes no paata forgettable. Metric profixes of decressing quantity decar centr mile micro remopage terrap

God is very sad. He killed a small world colory The Ten Commandmants no other gods no graven meases no van use of

-Joseph O. Alford: Portage, Ind.

Besilent Brother Rehmoust, Woodward macht still be present. The time Supreme Behmungt White Marshall Streets -John L. French Balkmore, Md

Only the study forcetty i follow should summon each number thusly. The first ten

(1) Privates can I solute without learning correct military command proster, (2) Potesseum chlonde - salt water - liquid, carbon monorade - condets. Military

(1) We get tred carrying Park Bungers, (2) Who sigot trans7 Canadian Papelic

Decadent Hoctor killed Mett a cicantic -Anthony Annahong Levack

On two of three streets flushing a fail house can be done four ways flushing straight or flushing rowaty. Poker hands

Errol lowes two targe midtown merchants: much itemment Alas Itel always mean translas Shakespeare's correcties in the Gentlemen of Vasonal Taming of the

Nothing Meny Wives of Windson, As You

-Pel Greener Capper Web

When Jack Lemmon handed Joel Grey MrKinley (\$500) Cleveland (\$1,000) Wilson (\$100,000)

MR. (&) MRS. LAMB. The common law toblery sodomy larbany arson mayhem -Welson A Freedman San Gabool, Call

IVAN CAPP The eight parts of speech consunction, advarb preposition, --- Marke Weeberg Vestand NJ

Every time an Otto invodes newsetancia, sontradinated human maders discover Iterary utopia. The Iniquency distribution -Summer L. Shapino M.D., Ericino, Call

Father Charles goes down and ends bettle Order of major scale sharps. F.C.

**HEQUISITES** for freedom. The Bill of prohibited 9 Enumeration of pertrain

Some hounds wag their taks nonstop. The an proups of purebred doos, sporting, On! Canada

No kid of mine Jacks my knivy habits. The eight major Hewaran islands weet to want Nates, Knun Ohts Molokar Lanas Maus Kahoolawa Hawar

-David Kirpger Springview Neb

dearbit house. The seven dwards. Breithul Happy

-Stoterer M Shuman Moro Bay Cald

Greet big earthquakes heave native coffee plantstrona Courtnes of Central America - David Detrich Fullenen, Calif.

Atrus genetic chain. The lour nitrogen hases of DNA, by inknow parts adented.

As the great cock tikes very little soft, she compensates adding pepper. The work of

In vancua Xmas legende. Chest delivera order I V X L C D M -David Furbuch Las Veges, Nev

Paote is an adjective. The four oceans -Mke Leon Ford dy Lac. Wis

PEGIS LAW The seven deadly and order

History proclaims these creditable monu-

- Angelo Papel Tistolon, N J

This line proved highly valuable in memorizing ten ittle acids. This ten phonylalanne, histidine, valine isoleucine methicane tryccohan

Men plan many VENUS jumps. The rinks planets in order of increasing size Mercury Plato Mars Venus Earth

I have a root of a two whose square is two 3. 2 = 1.4542139523 The regime of letters in each word equals the corresponding digit. - Don K. Paulani Duncan, Okla

(1) it repeats a constant of calculus/it constant of calculus (2) To express a property is possibly a proposal to consider mapined, of teachers I movined, Do eveloping will cases transform demotrucks logarithms, e. to 9 12 and 15 decimal places 2 718281828459045 (Count the

-(7) Julliov D Strahlow Milwoukee Wis (3) Stephen Budzik, Maplowood, N J

Number constantly in use in 1924 -Dooples A. Frank Great Laker III

Soveral men fought against General Lee to valued arrogant Northern traits The 11 Contextentes states, in order of secession S.C. Mes. Fla Ala Ga La Terri Va. Ark, N.C. and Tes --- Jon A. Beitrer, Houston, Tox

Marty partiemen ascend skyward U.S. oury Gerren: Apolia Skylab -Kerr O Mohrosh Devrahedt.

This system makes it easy Lovers of the

-Ans Maxe Perun Toronto, Ohio

Prepay promode con't hack college, yell Edumber Yele Darmouth Brown--D Jaffe Abaca NY

inde moores enorgie that delightful report moons reading outward from the planet Janus Menas Enceladus Telhys Dione Phea Titan Hypoton lapetus Phoebe -Emest Source: St Louis Mo

Draw Joons Industrial Averages Clawro Stock Report Sections of the intestinal

TM NO WIMP The states bordening on the Great Lakes Indiana, Michoon New York Onio Waponsin, Illenois Minneapta

-Mary Am Cooper Colorado Springs Colo

We Democrate can't miss. A mitemored districts whose electoral values weril to George McGovern in 1972 Washington DC. and Massachusetts -Dansel Gabart Denver Colo

nomosis insufficient corebnit storage A tanemonic for remettibering how 22 sole!

- Witham D Hanvey Costs Metal Call DO

## STARS

By Mark R. Chartrand III

ters live a lot ionger than astron

High aloo Mount Hopkins, near Tucson astrochysics? samoy - the Multoin telescope has the tight-pathering ability of a reflector 4 5 materia il charmeter makazo only as PG1150 035 - may be rapidly

in stellar interiors and apresed out into call supernovas. Pulling the cloud toogher is the feetule but persestant force of construstrough the void may provide shother

vears sometimes rending the cloud statiking men foot Auf alertika dibaste dense that if becomes opaque trapping millions or even billions of years, the

Now the thermonuclear turnace ionese. producing halium and energy from stellar winds blows make the case, perhans

The star has reached what astronomers.



hydrogen "burning" Not much happens

Then after a period that values awronia more mass - the star swells, its outpy stay on the main sequence. Eventually in ash pile of white clearly, bud exhauster dwindling out over thildness of years

observing a star in transition are small. We

Celery-but with unusual procerties Instead PG1159 CB5 is a thing unto again - vibrating in a complex way Most about 299740

This makes it hotter than most stars be pooling faster than most stars, if it has inclued run cut of energy sources. It is

howavar if the starts indeed sychima would like to know more of the desute DO



### PHENOMENA

Concession technicity and gars to an any service to always of the service of the service to always of the service of the service to always of the service to always of the service to always of the service of the ser



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title is known about manne mammels that whoever gets to an animal test may record a brological scoop. And if the animal is alwe, the sconer they get than, the batter their chercises of support is alwe.

But the stranded seals of Cape Cod were not alive. So many carcasses (fied a ratioerated bruck that is tools a global brain of cleocens live 12 hour days to complete postancifiem examisations.

Ninety-live process of the 300 assis had deel from the same intertaxis dicesse when a pathologie taskada open a paint to cage the domaps was appendit. The lungs and sissue around the heart showed same of implycens. The lungs energies the of Bad that them will no space kill for a heart lower diam.

Note and the terminent of the starting to of the local, which notes aloned grants and totals ever taken to histoboy stables and marrostrange. Leve issing and blatther samples were estimated to the starting of heavy mails and petiticals, including DBAs pravales and objects and start above methods to the starting of advantsming and the starting of advantsming and the starting of advantsming and the start of the advantsming and the start advantsming of the start advantsming of the start advantsming and marks and the start of the advantsming agreed the start advantsming of the start advantsming and the start advantsming the start advantsming and the start advantsming the start advantsm

Use locarity work had benefation and the locard typers to radiotypher builds of bore growth, will the constant had some dim linguist be expended to the hometone rain instatution of spatial Methory Investment Macauan of spatial Methory Investment Macauantizetti methody and the hometone sould be heatery A Harvaid careful to the flexibity Macaum of Antheology and Ethnology also winted hippes to luther south the work of spatial regions of linguistics of the method to work an information of the house of the method to work an information of the the south of the method to work an information of the term of the method to work an information of the method of the south of the method the south of the south of the south the south of the south the south of the south of the south the south of the south of the south the south of the south the south of the south of the south the south of the south of the south of the south the south of the south the south the south the south of the south the s

What caused the epizotic is still a myosary, however Dr. Garaci describes two possible scenarios

"The was-if is a wrise-call come teen any number of sources, reacking in the asmal and remaining relatively domain. Then one or more seeks an unable y domain. Because of numbers, food polytics, while aver. The seal becomes debilisted, and herwase becomes active and all the seal

A second sperano has the organism coming in cold survey from the environment histocia all seals equally and goes through the bend indecrimentally.

The first theory at the moment has garnered more support, but none of the screttists are sure it is the calentave answer

It is perhaps and differences backgo that we scraftize the dead for a dearer understanding of the leng. If sumed is with the of death finds a spring of decovery in the steatest way that the Prigning suffered for their selectors feeders, the harbor seals deal for our sealed. Do

MIND

CONTINUED FROM PAGE 24

factor — which Solar names authoritation virtuouanists — nay appear on the surface to reflect positive values, it activally meaks a searbal, stern, and moral title altitude

The compared individeal is concern accurs on vice interested workdeal is concern at his floppe, detressed wheth flopped and the second second second workdeal a bind person is prevene replaced with a vice power denies with any second life is for uses a concern bind placed than suffer the characterization of the second life is the sec

The result of the numerous negative factors identified by Sillor is a the for capable hand capped poople that is little but a shell in rermal automote.

Francess home for example, has the warm stractive look of a scosely active domain But thet appearance, like frances & a cancer is a chappointing summer She seldom embritains and has extreme diffrulte making frances.

Prople are usually police toward much rather terms. They don't seem very effecstinding applying to known as a percent. On the other hand some pacple are owilly frendly and fail all our themselves trying to do trange for me i can do mysell. It's pericent when that happend

As proceives technology and singleright negatives register of the second bits barries passa parts with be better than the open equators in 2003de twend pain goals to an other realisation of relationable to were for sectionaged another in openity. Social conducts and another than the technology machine in the point weakable to be advanced in the teach-

lierically problems of Interaction will become more social as advention and legal advences contribute to restore the limit and approximation of the limit of the lierical advention and legal adventions the second advention of the limit of the second of the Architectual Improve activation and legal advention that able of Cascalary the destructual manufactual ables of cascalary the destructual manufactual ables of cascalary the destructual manufactual ables of cascalary the destructual manufactual manufactual constraints and provide the second the the second them the barriers there are cascalar them.

The traditioning work of the MIU Isom should avera to a taxine of instance for developing methods to deal write emotional barries. Copyright with these possitivities is a matter of considerable turnats concern hardware lead popel must face the feet fatal they gave noth past the deabled in unconsocials hardware of elem people flow Frances S. will, copyring to face undiffered and Unrely lines. CO



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solution by using an electrical field. If it could be mode practical it exold be extranely useful in preparing hard-to purify metradiont.

Under Earth's gravity continuous-how electrophoses is difficult to marciain. The electrical leads have been and ther outtue medium and connection in the fluid antines the compounds one is trying to separate. Contections an effect of gravity in weightiescness there is no convection to reflect the securit/off

Bit issuituruny 25 NRA-Anseerd Bir poli with new Jort Erdeaver agriement in the new Jord Erdeaver agriement in the new Jord Biologie and a mage search-ned assignment program to de terms als laadskip of parauting biologi call instances in the search and a mage terms als laadskip of parauting biologies and instances in the search and a mage terms and assignment program to de terms and the search and a mage terms and the search and a mage terms and the search and a mage ducting to bits nontestiment of parautical of the search and does and These subdiments of our our even or many an castal does of thomas

Monthy earlier a NASA researchers on pussaish for this sunt of botochnology conducted in anti- was somewhill more canquise than the approved NASA release. We probably going to be able to find a cure for the common cold! He exclusive!

They will of course, accomption far more fram that it assumes there is no increase important that it assumes there is no increase imporment with backgoal processes, there will be an explosed of increasing and techingue coup propiet can increase and increase of the and explosed on increasing and techingue coup propiet can increase and the account of the increase of the account of a account of the account of the account of a account of the account of the account of a account of the account of the account of a account of the account of the account of a account of the account of the account of a

Whith - rich - the space and the bages as high-area bails or characteristic to the base and parent of the permission of the space of the space of the course of the space of the space of the course of the space of the space of the bases intern of the power space of the them in the space space of the space of the them in the space space of the space intern of the space of the space of the space of the space intern of the space of the space of the space of the space intern of the space of the space of the space of the space intern of the space of t

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For summer, noncompetitive games

## GAMES

By Scot Morns

When the Dire Great Soprer comes to write against your name — He marks — not that you won or lost — but hear you physical the game — Grandand Rice

In must games you win by making someone displose. Competition with the training for werners built in societity years psychologists have questioned wind effect it has on losers. In the spatial occigentation we present the indoor and four outdoor games emphasizing the thrill of woony without the space of defeat

LINES for the parson: The first please of a please of the please of the

Here is a service basic Asimov Ioaac Neeken, Johnsy Applicated Onan A Contan Doyle, Sterbick Hohma, Jamie Marson Francis Chek, Bistopri Menol Swee paie Edga Rice Burroughs, Incen Jane Fonds, Dick Nation, Challary Checker, Charl Chestanian, Bobby Fracher Theodore Strategion

Aber you ve played for a while, try to follow the steps back from the current neme to the original one. It's surprisingly easy to retrace even 20 or 30 names

to keep scale, though the game can be

played well or poorty On a goort day you f int orwerst strings that inflictly cour pute genus Landau Guilver, Robinson Chussa, Jack Webb, Spreier Robinson Leonard Minny, Dr. Spock, Aulia Child, Carotinet Cooke: Flavence Nightingsle Policy Wilsons

NAVE DROP Science West the defabets syncaping on the right safe of a sector of paper On the left with evitability the first solutions of any formula saying Them. In these moutes. Min is participations ranees as you can be using the initializin the two calorines. See how close you calor come to a particle sport of 26 Mu calor from the decision by allowing only rannos from two decisions.

Ered	A stairs
0	8
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Report	Duvall
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C .	F
0	G
Rita	Hayworth
r	

UNITE PRESERVE When your Freeder protocomer protocol to port whether your version as a grant of calculate to control to the your works as a grant of calculate to control to the protocol to the therapenet and the protocol to the protocol to the protocol to the protocol to the therapenet and the protocol to the protocol to the protocol to the protocol to the therapenet and the protocol to the protocol to the protocol to the protocol to the therapenet and the protocol to the p

Handicapping is easy Aless expan-

enood player has a smaller termsphere, and eli terrespheres get smaller as players des il you're not exteusted after len minutes, you're not playing il right

Problem SQL TARPE in recent years Probable has become a generalindividuated ballet instead of memy provide a sin of der drage a trayer new keppt the Finible expansion of comtragenal while particiming a variative tragenal while particiming a variative of whotou ever extravity and thrute the disalivetous ever extravity and thrute the dis-Altyroave mity have to wait several mutuates age that Probable back.

The technique that lock is in new narcessem is called the nail dely. A player technique the doc spinning on a nat, delaying the final catch. Some varicus players apply teaching palsh of take commo nais to their index legement and a silicone spiny to the uniternitie of the data all homeoreaches the function for factor.

John Karkand, winner of rev World Frisbog charapternitistic, sign Shat Bohner, Hage in learning the half olding is not to spin the date both spin your Imper Holding he Prospe stiggering with the unclearing learned you, place your index Impermation the content and herit is in small clockwase analise (sit instructions should be revensed for left thandball. Adue morecares the



bhei Kiskipsif a double nai delay

stage hold the indexe toncertaily in boom is then and spin in a clobwise uncome as seen information waterestin. Catch is on your informatic, betting as the same detector is the size. When the date task two informaing in size procession metro-balance in protocilar book income your laterest at metro-balance in metarrobay and clobes presented in metarrobay and clobes presented in the analysis. The same size is a size of the size is the information of the size of the size of the watchon in a key prepared and in the metarroba in the

Linformately while a sequent for a opti-handra to neckedary in a clockwas drootien yaa wat a claur weaver backhard broe form a grafichander mellen goming the spoke way (courterbookwas form bagotale way (courterbookwas)) a set of the postal set of the set of the set of the set of the melleting form to even the set of the set of set of the set of the set of the set of the set of set of the descape

KADIMA Many baok and hint has particle to the object opposite why in estimate at the object opposite why in estimate it is often more chair lenging protein the object of the object opposite back in motion travial of lenging to best "your wake estimate "groups the object" opposite cooperatively requires the decision and cooperatively requires the decision and cooperatively requires the decision and cooperatively the proteamer the ordering there proteamers the decision of the cooperation is essential there are being cooperation as essential there are an essential the ordering at the cooperation is essential the objects of cooperation is essential the objects of the thermoord while the phases of the thermoord while the phases of the sential the moord while the phases of the

I he Kalama process is three ply plywood. The middle sandwiched ply is bolow with a large click cut out grung a boundy "sweat appl" to the outer ourfaces

Provise sealing head to head, with the ball invertiged head has been a back of a back with rearging game can be played on a parking bar of na beach allowable. Pointing dhe of more bounced belower players allow some spectracities recovery shots. The parties about to refer the day were Assi few minutes on the beach, someone may come up and ask where you learned to play so well. After a few rounds, shatch your skills with Limits Kadima, played on the pringples of Limits Fristbas, above

LAP SIT Light or non persons (preferably many more) Sand in a conic a header to should an Near turn to the right. Then, were parkly acht parana rist dawn on the lap. (or knock) of the parana bahmd him. When this moves is done successfully, is algorithm tact/or and ears: Successfully, is algorithm tact/or and ears: Successfully, algorithm tatto or the successfully, is algorithm. Nong paratosis: Sector in fedit, a were UMNEDIAS conf. Brieg an impression (policity).

### COMPETITION #15 LINKS

Nai Amstrong, Amobi Sohwarzenegger Raul Anderson, Peul Anderson, Prodekt Hehr George Gallip, Scientines, Rohammy Woods, Pomet Tocker, John Gene, Penalger Inie, Jopes Krimar Japos Brohen, alte Alace, Krimar Japos Brohen, alte Alace, Nena Jahren Steine, John Lenson, Pingo Staur Bennie Starr, Maan Aulins, Nei Kenetina

Above: a name chain based on Links the noncompetitive game described at 140. Hers it becomes competitive



Lap at Exchange from the an unercourse carely of eight or more parsions. No toking, please

template the enormity of what you have just done. Your arms are free, and you can give the person in front of you a back rub

Now try this At a signal everyone take a step forward -- left foot first, then right left right fourie cloin the caterpaliar walk!

This diversion was enginely called traverse European C (role, where the Auchain emproves is account of how her biolicitic high (role) where estimation is there is the New Estimation and the control of the traverse population po Compress a list of 20 linked names. starting and ending the list with the same name. The basis for linking must after a lide reflection, be set evident.

The sheath-de-incorrectous receiption with have collect Links as published after workplay in Cheeseday, by Dan Greathourg (Stein and Day 1968). Advisorial Greathourg (Stein and Day 1968). Advisorial

Number your names to 20 and send postneriked by September 15 1980 Postauda and performed The free proce where will receive \$100, orthograph (2-10) will each receive \$25 All entries become the property all Cervs and will not be estimated Send to Competition #15 990 Third Arease New York NY 1022 CE



## LAST WORD

By Patricia Seremet

 Ionged for someone to raise his voice ... but it was more like the knights of the round and round table \* need to be a served up to weetern orsons weeter satisfies for two forig ficture in March, and Use come two long field after the

It uses in two-city setelete twiseumposium exoponisoned by the National Accountion (Menufactures) and the National Net Frons on Richnelogy and Scosey to discuss "Innexation Its Impaid on the Eighteen, with spaakars from each city connected by closed citicus setelete television.

"The books in additional rate "the bill as in constructions herehrings an interaction method to interact integration proteins an interaction." There would be promote prohibition and honest heperate software constructional and methodanal probability of the construction of the quadation stored day, in manifold interactions in the cusature climate of languation into proteins had wEDH in a setted hashtation, Connectual on an of the setted

About ten minutes into the program, atteina great desi of manaatekterbeckpating is exemail the telepymposium was experiencing a "KO (technological incoment).

Lever Laplace action of Merper's, was to be indicate of moreing the canonical presentation, which was the generate we obtained and the future of event with the set of the set of the set with the set of the set of the set of the set of the work, when autoestude, have been been been autoestude to be set of the set of the set of the labor of the set of the labor of the set o

But technology solon prevailed and it was back to the miniposium.

 Test, a takin legoriter among estima 35 trailinear popole (all when muscle) many who had peer \$1000 to allow of We herent an enders stimp of apositers (all white, all many say mostly the some timit, process taky apoint on this here one sales

Pesaburgh tocked of the program with two species introducing that city as the most tochnologically innovative bitly in the oscarby, he was followed by San Jole, whose popularisma aaa. We think with a just as ancovative as Philobarghi, and so can from Washington, Dalast, and Hartboo Brory, breg. breg.

All the speaters satt how increative they all were end how eaching if was to be taking about provision through an increasive register. But here was hitle align of increasion in what they had to say

It was less less bie a symposum and mole like a messing of the king tits of the roundand-round-and-round-span table

in the air was how Weltern fuction constructing while to Harpor's, described the eventure canaca from Harthort. During a break how satellite communication when Worth Loomis presadent of Dermisches Fs. Dakter Corporation (inter Ricker to 191) the auctionals how he'd describe the conference thus far herestries, "Very borner."

It based the parameterization formechnologospiki intractication production concerning there was no distantiation in the nation. Longed for screenix to intracticity spicer in Sam Joge maybe pound his file in Peribaugh or goth his danter dant in Dahar J Raufal was sweed by the individual advectments of heats specification on Dahar bag obsequenties of heats and existing danter damanes pherproughts of heat subject.

After all 1 was spending five house, heaving these man talk—larger that take spant on Gross with that Wingt or Saruptes—and I expected a HSamole minimistation for my one

Unlike a time wine, the symposium did not improve with age.

Like a true write, however, itwaas vorgwere dire

Each men classified the comity of imposation as the governmental buseuestacy and each man hat the same doll each comit. Willow Fredmin, champion of lating the manipulation services this retreamts.

Not poly uset Freedman's name metticined selveral times during the day/0 thought I saw a few treads ticky), but atteast (we speakets ware watering the Environment traiterants, an Adam Broth tie

Cr Robert N. Nayce Inverter and Source of bial Corporation Sense Clears, halo have been assessed and the settle automote that he vais watch at all brines. Decondent with profess of Adams Smith, tenade with profess of Adams Smith, tenade watcher of the free main/place, the ten obes for doctoristic what the Cacets Mayaba dates for golders.

Dr Noyce then pointed out thet felow paratise br Kerneth Bouddhig was allo researing the Friedman its in red. The affable severity-vesival potessor inom the University of Colorado waved it for subservation the other brane for the

But In Hardsteld he symposium Netters locked womed, Their panelist, Dr. Ploger Mere woonness professor # the University of Merry I hav answel labe eind wosh't eletang a bin at all, much leter a Milger Freidman tool-alke ane

He also had a blowing blond Alto, " which extended into the Jappi of fellow strakets on either sale

However, after Miden's appach (I without no complexited (I with Tacket Tolecen herr) that environmentations were helding back progenises, a grant segli of stated wert finding in the restricted statuckie. I funk i stay even have treased a collective right sceni that offer a state file collers.

You may look the a highly 580 Hartland's moderator Looms, "but you" sure don that like one."

Technology wes say says from the desenters, and everyone seemed to go home satisfied DO