ROBOPSYCHOLOGY AND COMPUTERS: LOVE AT FIRST BYTE HAIR FOLLICLES OF THE RICH AND FAMOUS



ALAN GUTH ON THE BIRTH OF NEW UNIVERSES AMERICA'S YOUNGEST INVENTORS



EDITOR IN CHEF & DESIGN DIRECTOR: BOR OUCCIONE

PRESEDENT KATHY KENTON COTOR INTRICE ADDROFT ORAPHICS ORIECTOR FRANK DEVINO MANAGING COTORI STEVE FOX MANAGING COTORI STEVE FOX MANAGING COTORI STEVE FOX

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MM 2010 - 10 m privatements, cui la fini se la casa da la casa da



This recently server in by New York painter Mervin Matchion it was conversioned by the Scheel of Vacual Arts on a poster to diversate the oxids. Even a gridt dola is only an idea unit ros realise unit."



FIRST

By Ruth Mackin

 Twenty percent of physicians surveyed by the Hemicok Society, which achocates the legalization of euthenasia, admitted to having intertuctedly taken the lives of tarminal patients who'd asked to die. Easist the page Tain Hernstock Cockidy, un applications - schematic phy high-calculation of scattanaica, surveyped - 5,000 (physical) compared thesis braining - physical metry suring, phonol and they high-ch⁻ (h) thereafters a survey work that is the schematic strational a survey work that is the schematic strational association work that is the schematic stration of the physical strational calculation and constant Metricia Monocolarus publisher destant and the low of the remote destant and the schematic schematic destant and the schematic schematic destants and the schematic schematics.

 These developments have prompted a public debate about a number of ethose questions. Is out-straine always wrong? Can it over be justified?

Denved toon Greek nocks automatica means "goold death." The alternative other can be a paintist death, devolut of dignity and accompanisat by fear, maplementers, among, and despati.

Many terminal paients explaintnos et lang pacod of udvinnig balance hay clar in ordan to provide the terminally iff with the characteris conduct, deally with equipmy car suscept has beginn tooling at excandances in whom a scontrol de patient, with head of that or the physitean, can thate chorosis regarding field modeal interprints

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Libelevent that there is proving wrong why outperty and interests where it labels there will prove and a particular the interest and the second second second rest merchanges. Others are allow voluntary exchanics to size place, however, it lave a could begin moving based in maturely and particularbility of the second begin moving based in maturely and particularbility of the second begin moving based in maturely and particularbility of the second begin moving based in the second begin moving based and the second begin moving the second second based and the second based and the second based based

The problem becames ince complex when we controller withdrawing a Bopostaring interfered elsesky begin. Some physicians belower that withdrawing life support from a suffering potent is emissed and encud be cleanheid. an active publicance. They see treessolves as this cause, of Hereit Newsgare New Actively "public page of a his appent system. Not other physicans dew which owng ikits authanting Insulments as papare authantical Westher a treatment is withheld in the Inter piece or streppet alors. In his low advances hared. These doctors believe it is still the docesses that is list the policies.

Meaning decisions regarding the end of a patient's life is a difficult task for any physician. Such sexies, furtumfaily, have not been left surely in the hands of decision decision with the hands of decision and to surely has begun teams attent to easier these decisions.

Lois wile, writen statements make by poople concentreg it wan statements make reporting have matcail instituent, have galend logal recognition. Obwouldy, have autory to decide its 1000 the California Association the fait state to passed. California was the fait state to passed logality and other states to the inner water the fait state to the inner water the fait state to do the inner water the faither to do the inner water the faither to do the inner water the faither to do the dotter water the faither to do the state to do the inner water to do the dotter states to the inner water the faither to do the states to do the inner water the faither to do the states to do the inner water the faither to do the states to do the inner water the faither to do the states to do the inner water to do the states to do the states to do the inner water to do the states to do the states to do the inner water to do the states to do the states to do the inner water to do the states to do the states to do the inner water water to do the states to do the states to do the inner water to do the states to do the states to do the inner water to do the states to do the states to do the inner water water to do the states to

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Fuch Machievis the author of Montal Chortes Etheral Diarrey value in Modern Modernie and a protessor of broeffices or Albert Brodes-Colupte of Medicine.

CONTRIBUTORS











Is a some land law that allows humans Can mortels and stachanes reliate to one chology (page 45) former Life magazine prefer the world of bits and bytes to the ability to deal with a more unpredictable artwork, by Relph McQuarne was

asks. Would the course of history have changed had the all powerky medium have wan the election of 1992/2 19122 provoking article helps kawn Dimswhere it's been and portinues to beto the footier of thought DO

monotots can be a her mission advanture Literally For Ocora ontabutor Gumey Welsma N. unlocking of drug use or abstimmos for exercise. Collmerk Dependence a Maryland based company that makes Tecorports had DNA in common-one from a In "Har raising Science" (page 58)

Williams tells just what her can and carnot even about its center Har turns an enviable collection in its library Boneparte George Wastenpton (17) psychopharmacologist Ronald K. Siegel stash. The purpose of a library says a

curi your her, any reading the/yest a harred busineseman and a not-so Child

impount ty do bettle, who wan? Our place in the desert near Cairo, author

of preewining inventions juin to "Child's ingenous tems for Invent Amencel s his blood-his creat grandlather had Ekzabeth Dorranaels food labels for the

called the inflationary universe is Guth's theory explains how after the Big

COMMUNIC/ATIONS

Stucherts/Teachers

I must take exception to one of Marvin Getron's means for improving education "Teach Our Children Well," Forum Aurant 1991 He sameth we more school system How will you married a starting teachers salary of approximately

Charles Prokco

Yes, the have of the country does let within the learning capabilities of tostay's What about what s going on now? Is the defension of well-educated aludant spit it back on a standardroad test only a pay rase because hoiste cont metwaling studients is a goel, parents can survive measures from children to muccosed

Class of 1999

Onry Balar

is the best source of sponton and informetion about the future any schoolbook could possibly teach or publish. We name, so we decaded to fill the empty are too We would like to know for our where and how it carcineted.

Editors note Onra is the Latin word for

Airring to Please

It seems to me that whared detectors August 1993] are really an exercise at fully Syme 40 years and the state without resorting to technology or climate al-languages writing machine

G F Edhard

Starved on Mata

The article "Dring Out" [Space, August 1968] was up to Orths/'s level of excellance except for one detail. Either you more major cultivides By my enthrmetic a free-war wyaco with at least free more than 1,000 stated in the article 1 for out the Martierer to be on a det They?

Jeanne Leiter Arrada CA

Editors' note: We agree Thanks for

Correction

In "The Clering of America" (Continuum, the University of California at Berkeley. He at the University of California at Riverside Our applopries DO

THE REMAKING OF THE PRESIDENTS

TELEVISION

By Garry Wills

In the prosteries indicidate was not be write in cases. "We have pationet, and our patients have been accord." We have begoet and hely tree model write. "We patient a more two dely been that a grant case are instant with any deliver and the patient and the two starts and the patient and the patient and the patient starts and the patient and the patient and the patient starts and the patient and the patient and the patient starts and the patient and the patient and the patient starts and the patient and the patient and the patient starts and the patient and the patient and the patient and the patient starts and the patient and

This speech wer not leaves of the week of the inform of high-stand convertients in New Chicasi of the Dimension Convertient memory and the speech of the prevent memory of the speech of the speech of ground, common speech We find them account moves to higher ground, common speech We find them account moves to prove them account moves to the speech account moves the speech account moves the speech account the speech accou

"The determinant of the second second

Many people, when they think of

tearwaion consider its cosmittle possbillios rather front its ability to transmit information that only insiders knew in the past This election year has given us nominees for the presidency who see not either of them, stationary telegenic second as much of his time avoidant. televasion on the isom of pross cortiercances, debutes, and questioning opport tundes) as in adorring it with construct all addresses. Wrong information or historical blunders may doom a cande the 1975 details between Geneid Ford and Jammy Cartor, for exemple Ford's ockpa in the oclin

Even so, the operatio power is there, as ease beinonstrated when Sanaka Kennedy is moget proved as much mere attractive fram thos President Richard Neon's in 1960. Before the frait Rakwied datations in American Indon, woters were evening path between Kernedy and



Luncois Not a coade for-TV president

Noon in the four objects that followed, the young Kennedy was calm and robusted. Nace: the more repertenced extensive, appeared rome and if at ease Kennedy's tooreki mage probably was a crucial factor in the name victory oval Noon.

The time is war had made to publish course primely better in 11 V doined. To here under the space of the bytes, the here available affords in timel and discussion that doined in the bytes. The discussion public, however, is the use of impact the space of the space of the available of the space of the space of the available of the space of the space of the available of the space of the space of the available of the space of the space of the available of the space of the space of the available of the space of

According to today's media consultants, candidates should word appearing understein manan ave constast, smile under passure, use proper gastures, give brief but direct asswers to questions, and learn how to control dirbut infair www. The purpose to win over the under deter wear.

They is the adverted it servanon, and addidges were used as Consortingand addidges were used as Consortingtion addidges were used as Consortingtion addidges and addidges and addidges conversels but hery virtualities the service of the service of the service degrades and an object (service) to could be the service of the service of the service processors (where the addidges to the processors (where the addidges to the processors) (where the addidges to processor

Large crowds, possibly as many as

IS COB people at one time—gathered to hear Lincoln and Douglas School Partistis in head. boood and interrupted the speakers up close and lought with one another around the edges of the coved where particler was being having there around booth—the egywateric of moders TV adds

Hypotopias history is mean rules, the a game rule will be been provided and rules a game rule will be been provided and game rule will be been provided and game in for the been to be rule accurate (a market will be be accurate (a market will be be accurate (a market will be) accurat

With all of these factors lakesh into consideration, we can make some reasonable guestes about what would have happened if selevision had been revealed during paid company's

STEPHEN DOUGLAS /AND ABRAHAM LINCOLN ILLINDIS SENATORIAL RACE 1858

The acade usity to before modern diables on thermost in the interfacent has been as the interface of the the second second second second second the second second second second second second second second second the second second second second second second second second second the second second

Despise were the Service users in 1933, been aan reget have videnced to margin a bit. He was an represence poperative somethy rearry of the James Despised vidence of the James Despised vidence of the Despised Second active of the Held along pole Yoths space operate at Really in the these hear and real bit do and the pole With is own opportune to bit about the were the Bear and second

Encore on the other hand had some very eccarring plattom manness, especially at the beginning of a speech when he was utilitarized. Histophin langing and uncleaping the hands, feel bahrd hum and hen in homo hamad bahrd hum and hen in homo hamad a uncouch warrig of ha hang aims or a subtem dip at the knows followed by a charp upward priv whit math platbol-

Teddy
Roosevolt, shot by a fanalic, went on to give
'his scheduled speech. His shirt bloody,
the bullet still in his body,
he said, 'T will give this speech or de.⁹

laton of the head --were often indesorib ably creacher

Perings with proper coaching his regist have model on its sights for deterwork where his logic humon and boardwid process would have make its measured. His sky remarks would not have measured the kitikey emphasism his plant measure expected in the logical assertion expected for the board of boughts threads and board of the boughts in theorems on "home-path is expected in the different plants."

The Luncels-Douglist likelisis are internative impacts bookuped by light men were injurg to save the year men were injurg to save the Lunce peoprepare tasks freenable. In all been variables would have made the would have insued have made the would have insued tasks in the terdestance it would be made to the would have insued tasks in the terterated and the second tasks in the becapit in lands to impact to the strengther might new test landshift to be test stages.

people yeal bit salares He contented would somediawit bit bit opt of the everyone would someday agent held is wear wears and them and not in then it hank well was in some way come to an end of the bavery agentation. Douglia might have been baced to say what he hought have been baced to say what he hought have been baced to say what he hought is barry bareforment of his sathwain.

THEODORE POOSEVELT AND WOODROW WILSON, 1912

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Westlike Wilker werning barren of the set line of the set line of the set line of the metastration (set the forth work how), we an in created of the densities of the set line set line of the set line

THOMAS E DEWEY AND HARRY TRUMAN 1945

The modern poling techniques of t948 land Thomas E. Dowey into a false sense of security in his bat spanie. Henry Trumen ligiting the expertise of the day Truman revented the modern campage than (now spaced by the company market in

THE ME GENERATION

COMPETITION

By Scot Morrie

Douglas Holistadar pointed cours every time someone says 11 or publishing, makes a move about movies or writes a story about self-colonation

Competition #45 Holstacker served as the visual callegory receives an Olympus category a Frankin Computer Spelling

one entry indicated that a dictionary more road. 'See reference, sell' it was cliftica.(1 to tell il some entities word yound or variable options. There was for marries a helion-coversied ballory you're watching 'likserase? Write for free brocture," product ad successfed

HERE'S LOOKING AT ME KO

rapher in a mirror Two deserve honorable mentor: Windy Dubon of Casseborty. photographed hersof in 1.4 profile current the first traveler of her precisings in a dreaser metor, on the dresser is a

SIGNE READING NO BLIND PEOPLE ALLONED for exempte as well as a placast stating

Seven-year-old Laura Buckner of that erases itself," a curved pencil that 20 DMM

Robert Petrick of New York City sent us a "carbon copy" idea First draw the sheet of paper, leaving a pile of GRAND PEEZE: Allan Lain, Kalua,

Hawali a sign that reads Lowinshotma

a parking son depicting a wheelchar

shaped sign this roads shaped volume

Martes Beher, Spinoleit Terres

David Strait Deriver solicits controlling

HONOFABLE MENTION Circly



an Anina Life & Clearsity requisition 1395 E, the official requisition form

station's underground tank while filling its own cars tank from one of the pumps

Michael Brugman, Besverton, Oregon the registered trademark symbol with a smel regulated tratomark symbol

Jo Arme Hughes, Releigh, North POINT YOU MUST BACK UP ONT INDUST INCOM

selfondul flogong in spece Bon Thompson Gathersturg.

George Mewerthalt Maple Games a po nor ovitor sign above a handle merked ruse

Anterw Hensel Witterico, Ontano spone puzzlo peope that fit together to WITTING MYSELF ALFETER

Nearly 100 entries in the verbal category referred to their status as competition entries Exemples include "This sumy entry "This statement wont appear in Only megazine." I news Many of the best entree with

Ouestion "Where did you get the wo SOLIDITIVO SIGNS?" Answer "I bought

THE BIG PICTURE

SPACE

By Stove Nadis

The concernant and attributes and the second second second second second second attributes and the second second second attributes and second second second attributes and second second attributes and second second attributes and attributes attributes attributes and attributes attributes and attributes at



How have the top. New satellies could allow study of the whole Earth climete.

are photosynthesizing at a good rate and, perhaps, if not why not " he says.

Later mitbasi EDS whicks make a create part of the such centre of possible The Later Annophies With the fast divel space-based message the fast divel space-based message the divel space-based message the divel space-based message the divelop spacemessage and the state of the space with the the movements of the divers praterexisting the state of the space of the state of the the such as the movement of the the such as a state of the the such as a state of the the such as a state of the space of the state of the the such as a state of the the such as a state of the the such as a state of the space of the the the the such as a state of the the such as a state of the the such as a state of the space of the

The second secon

Boundaries have back hardweller and the second second

NASA, which conceived the project in 1983, is now revening more than 450 proposed for possible scantho experiments that are using the EOS pletforms and their data. Though the project revening to ensure the

BORN UNDER A BAD SIGN



By Sherry Baker

han a fried year-old Maryland boy waiked imp hanged himself from the safers last year never been in trouble and seemad to be tamily his clearly was morphoable. studying the phenomenon of teenage cuecade, it was one more statistic in

tagged losing their only son. He had been born with his umblical cord

tendency lowerd (wickle- its well as a may be linked to traumatic birth expen miana some children of resk for later selfdisstructive behavior, withough they clorift will know what percentage of of ideas are affected or what the colino metacle the type of birth trauma may slep

The reward search rate in the United States has tripled in the last 30 years. communic most dramstoally among vision men between the acros of lithers and twanty four, says Jim Mercy, a Cavity (COC) in Atlanta According to one American teanager attempts completes a successful auction aver-

What the statistics don't left us is why . Most theories on the circumstanable inderlying additional subsidial continue - Bethowie Are some prediacoused to subsidial N OMV

to focus on psychological and social the problem implicate averything from society Psychologist Leo Salk of in 1995. "The state of attributing the topking of suicides among teenagers to the states of modern the suit dishift 64

interarive care units, Sale bagan to saw overd their lives to heroid modeures substantially bround Misson yoons before we started seeing an increase if toonage suicide rates," he says "We know that makes suffer from more bath



To determine whether statistics bore out his hunch. Salk compared the suicide with those of 104 controls. Three lack of pronotal care before the twentwith week of nonroance and chronic d health

That doesn't mean that adverse sarry head to suicide ' Salk gave ' The Partner he says, a traumotic birth worecorris a rick tector fast may make en avintement more substated to suicate

heavie Karolinska institute, has come up sumanding in indeckols britti may Jacobeon examined the birth records hospitals anon 1940 who pled either from addiction or alcoholism between 1975 and 1964. Then he correspond Fair bythe web three of nearly 3 000 controls born at the same time, boking for some

specific than he had hoped in one US. closely associated with birth trauma fran with any other of the 11 risk factors socioeconomic variables as parental study cooducted in Sweden he found a trauma and the method of succide. For apphysioted themselves-whether by hanging, stranguistion, drawning, or cars poisoning-with four times as likely NUCLEAR WASTELAND?

EARTH

By Cathy Spencer

In the most Bevertien: It to Stacyoth Association and the second second

Curverity that I million galaries of landsare gammad from the plant each drawing an engineering of the second to the drawing consumed by runn on outpin into drawing consumers for unexchicit use, questions remain concerning the addity of the second concerning the ritisological store for human load chain Left 1006 bear research and kilo

Left wild be can relate a point in over other barged weeks behavior oppoint terms in the United States and the only terms in the United States and the only inclusing of Other States and the only inclusing of Other States and the only only and the United States and the only and the Other States and the United States and the Other States and the Other States and States and the Other States and States and the Other States and Sta

Although the accident was invaluted to be activate propert the "Introduc impand a spato of news reports revening the casedo importents of the farthent and that in SEC departs an INEC stady starting that the biogram change in using the farthouse his biogram poducion to the human biod chain. The INEC had approved the experiation of the program time also reported that which the commission had rejected an earlier request from Bocupyah for unrestricted use of the perduct, if was recontacting a similar request because of new data supplies by the company showing the material to be sets

Upper by the investment with the term associates loggers to even the term of the term aways and the term of the term of the term aways and term of the term of the term of the interpret and term of the term of the term of the term of term of the term of the term of the term of term of the term of the term of the term of term of term of terms of term of the term of term of term of terms of term of the term of term of term of terms of term of the term of term of term of terms of term of the term of term of term of terms of term of the term of term of term of terms of term of the term of term of term of the terms of the term of term of term of term of the terms of the terms of term of term of term of the terms of the terms of term of term of terms of the terms of the terms of terms of terms of terms of the term of terms of the terms of terms of terms of terms of the term of terms of the terms of terms of terms of terms of the terms of t

Public turor enubled over the raffinate program—ourage smiller to theil in other numl communities actions the



Promitiage to catific to man a lovid chart?

country where residents complian that organism is being runned, health is histotened, and the environment is plagued by contamination from incoloer processing facilities and indirectivewaste dumps, which are not monitored doesly ancigh by the government.

The direction is of the line who can be address that any set of the line who can be address productions to can be address and the line way match can be address address the line way match can be address address the line way address the line way have the line way address the line way be address the line way address the line way be address the line way address the line be address the line way address the line be address the line way address the line the considered on the line way address the address the line way address the line the considered on the line way address the line considered on the line way address the line does address the line does address the line way address the line does address the line does

Beigewir Fuel is a stockerv of Kon Möchen to comprey replication of the 1074 antecessing the tele Nerror developer, in stocker the tele Nerror centre as the ways of her web Nerror anter as the ways of her web Yes need damagen primeren hoats conserver, allery processment to a Web Nerror teley processment to a Web Nerror teley processment to a Web Nerror moosche elements and hear ymmäte in agroups activity of web Tele Web Nerror of agroups activity of web Tele Web Nerror of agroups activity of web Tele Web Nerror after conservation, is a bleet in nos taxos elements Tele more Securativity. The development activity of conservations are allowed to the televation of the after conservation. If a bleet in most taxos elements Televation (conservations) are development.

But according to Bertell that is backase there is no phosphase in the solution. Note commencing weakable testilizers contain compounds of phosphase, introgen, and potal acut minimum interaction a phosp definer and has none of the properties newsed

CONTINUUM

WHAT SIMPLE FOLK DO

A string objecting we can use We have how by the history which seemi pointers the Trobard be when when the pointers the Trobard be when when the stream to other index. Hence notices and when when it is the in toothern index. Hence notices the seemin anti-popologies and mady where your - home hearing, be indexed and too per usage.

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In their time in not begin times, but interruption takes discovered in the other of the pacetopic with the wave included model and allow other of the pacetopic takes of their times of the times of the entropy of the supposed take of their times of the times of the entropy of the times of the time of the times of the entropy is estimated. The pacetor wave got of verying in order words, in the state of the supposed take of got or words, the supposed, neither the balance the supposed takes of the other words of the support times determined the support of the support of the support the balance the support of the support of the support of the support takes of the balance of the support of the support of the support takes of the balance of the balance

Twee ar conditioners, for example Kempion found that many people sent is well aware that the machines have thermostate. Furthermore, limited as conditioner use is often rework but atils to what famplan calls. Tok physiological theoregif like "The clock, less blood to keep cool".

Retries must be them are used and the strength of the strengt

CONTINUUM

CROSS THE ROAD?

It at sauces with the English To help backs wood getting squashed when they crossed busy made the lither built depon sumels underneals to classif knowled Pollowing their lead, the Assiss hish and Game Department back a correlevant larger turnel leat year designed to lead proceed hour designed to lead proceed hour designed to lead proceed hour designed to lead proceed hour

The ten-foot-high consiste sunnel has helped out modele-oar coheions from the pipel at the pipel addet in the interpret of heroscient that use the named. Here backgoats have set out instructions not to pipels around its backgoats have set out instructions not to pipels around its backgoats workings also with the backgoats workings all which and many instructions assert maked in the have decoursepand set the anomale set out the anomale set of the have added in the have add

FLOWERNAPPING

It would be hard to hind concludes more hard to hind explosion sectors grown in pages absorbing the Soviet Union is Salyur 6 space tables and externed to Early absorbing the Soviet 26 approximation of the Soviet Soviet Hen rights of space interval and a weighteds answord the rights of space interval and a weighteds answorth on the Soviet Social Conception of the Social

"The Sovets intelly sent



A rare space-grown orchid was labled born in Rumaws philden

costoreauta aome persona logical support but they became more and increa interested in performing plant expensional, "says Thoma Habititod, who heads NASA's pages busilogy program.

The provide operations of experiments on Common operation of the set of the standard of the set of the set of the standard of the set of the se

Typer was appendicted on balance to ecuid self the state plant on the lucrative brack marked Soviet authoritors, nowever, anived too late to liberate Cosmonia. The lower apped orchid was found iteral. Sherry Balant



MODES: THIS WAY in Alleva biologists are crying to racula mode brough a server browth a netwy sydfoled highway in order is sol down on mode-car collisions.

S4 DMNI



Can the wind import an

-A A Mine

The system with Derror poor

of apending write-of will no

by January 1969 And the by 1990 -- George Nobbe



CONTINUUM



Personnations at Parint State Avera Round is cheep and permanent way to induct derigenous rediouctive com New the water both in excises power plants and conterminited lakes and streams

DISARMING NUCLEAR

Ki been two yeers smoot ise Chemotyk dealer and be likes and swams in the vanity of the nuclear power part teve linely stopped setting of Delgar counters Had the Research been to poesessen of a new material developed by a heart of minerslogets of Penceykrises State Lakever, however, the descripting hyperbase telen advances telen telen advances telen telen state and telen telen advances telen telen state and telen telen state and telen tel

Sochar Komerneni and h

colleagues were rearching in a substance that doubt charage winter radioactive weter in nuclear power parties weter in nuclear power parties they suspected into a common substant and the subcharacteristic parties and the characteristic parties and the characteristic parties and the characteristic parties and the characteristic parties and the processing the char, a data parties and the characteristic parties and the characteristic rest for the danger of it leaching into the environment *

Kommons suggests het genalang het moa over lakas and stream in he area of a nuclear aucodent would effautwich retrieve he posichaud is stagped basent to setter hearing the power and is stagped basent to setter hearing and "Kommon has not (puter, but he set), in relative word "Kommon has not (puter, but he set), in relative word "Kommon has not (puter, but he set), in relative word basent down and the set).

GOLD-DIGGINI BACTERIA

The U.S. Gold Corporation in Daniel will begin feeding in bactesim celled Thotacattae tencendisms in regulat diet of sufficie one next spring in a betract gold from pyrite The fraget will take place in a mens maar Torien Springa. Nexada: by means of a process known as bridgeting.

and if goal is entrefeded in valide one filtratering it by valence filtratering it by consend the one all high emperatures to and high epidebulkers to and high emperatures interfeded are also wry expressions. These the lawy it is Goal presented with an high T is Goal present with an high T is Goal present with an high T is Goal present with an high T is goal and the pretor the second second and the producet the goals on all the sets areason.

The company will dump crushed pyrite into four hugo tanks, add the bacterium



previous pyrate to gold

and then marriage a constant

temperature (2011 to 367 C). Both hours law, the backenum will have cockaed the onemain a fern free which gold can be extended the Nevado paint to process 1.2500 and conce date, producing goal and producing goal and the work metal producing both both metal Section and section The work metal producing both both metal Section and section the concerned to the section works will be metal-concerned works.

COSMIC DUSTPAN

A proup of U.S. and

Franch scientisis may have come sp with in regenous whe of centuring ocenime clust particles writers to temograp them. They want to place of sinks dreim when glaces a mobile, on the Bowlet space station Act and let the clust by mobile, on the Bowlet space station Act and let the clust by mobile, and let the clust by the I. Boolassi Assign in the Science I. And J. Boolassi Fitter And J. Boolassi Decave inter of the observed out is reactual from the formation of the solar system it may give us clube about what overpounds sosted at first time. "Coame club to made up of all sorts of next solar." Pummel says: "Even small clearnonds have been found in it."

Association particular to the omployed on Mr this writer But first the Department of Commence must give its oldar to send the U.S. tachnology to the Severt Union

-Orvera Pro

"It is ensuer to densiture pU/forwarn their to deneiture the evil spint of coan " ----Albert Constant

I instead of ebudying a thousand rate for one hour each, or a runched rate for an hours each, the sweetgabar is likely to shudy one ret for a thousand hours."

-0 F SKITVE

wver vote for envore / wys vote agence*"



Mit collection 14 joint LLS- and Pranch supervisient at unprere coorde dust may be conducted on the Sowet spece station



Minuterial polisions. One site Company dense Preciping venders, machines well be the hodinal thing going to 1989.

SPUDS ON THE RUN

Here Menote may not have inverted the vesifies beyond com-operating French by vending meshing, but he series to have come up wells berrot to have come up wells the declare. Wignes, men sold he patient to the Ore-sis protection company, which is maintaining the mainter bo hospitals, college compuses, and merufacturing plants.

Hor adout no carea, the Menoti--Ore-Ida machine will produce thives and cre-hait ounces of piping-hot French Inter in just 35 seconds.--a comho cap time, as they any in the vending machine buartesis that puts fast-food outfine to durine

But speed is not the only advantage Manoth's evention has over certier designs. He unit constrains a thesase their holds up is 200 eevings of shoeting potentian, and a cooling system that house desires, and recordures of children's an arright coolea the coolea coolean you couting coolean coolean you coupending and strategies of the coolean coolean you coupending and strategies of the means always the rate of the " exprimers Minuted, why once operated a poste precessing operating and

The Che-Ida model also has an odor-and-furne condensation unt that requires aervicing only about once menty ten days, increasing the michael parent comprint, Horas, has agreed that wat sind leinch-up will apport and leinch-up will apport and leinch-up will

Ises --George Nobbe

CONTINUUM

DEJA VU PROBE

Disa vo, that strange sensition of having already septemenced a present moment, may simply be an illusion brought on by an electrical lists disap in the brears listed disap.

While studying the anest of Source in elevation of Source and Source in elevation of Source in elevation of Source and elevation description of the Source and Ansistment of taphatosis expenneos teatings of products when any source to source technical cobusty and when the subcommendant description of the source when the subcommendant when the subcommendant elevation of taphatosis expention of the source to the elevation of taphatosis expention of tables and tapical tables and the source of the elevation of taphatosis and tables to the source of tables and tables and tables and tables to the source of tables and tables and tables and tables to the tables and tables to tab anesthese) "They would say things like "Litest like Twe been in this operating room before "but of course, they never had been," explains Anderman

The researchers between the the two reliable of basis of basis more information weaters of the performance of two weaters the performance of two weaters MCGB sectors because the any set of the sector sectors and the sectors and the any set of the sector sector associations but according to associations but according to the according to associations of the sector the according to the the according to the acc



Calle we experience in wy workely by caused by absorbed electroal dapharges in the brain's temporal looms

MALL MANIA

Everyprine has seen it happen. Someone waks motion and her mathress strikes. The main or woman is overcome with the urge to buy—shoes, clothes, clot, a cooker TV, seeity, unitoxilias, booke roop. Mail mania booke roop. Mail mania

Mori Trieve, professor at the contrast of the second seco

Pader and D'Gunn darts, had two types of compulsive shoppers. The first, "tonge buyers "parchase huge almonts of goods periodcally, they tend to engage. In finitise, migraining that they are reality and able to attend my desired object. The second type, "dely shoppers," are unable to miss a



Lost in she phops: Computeres beyons anoth belo

angle day at the mail or any place where purchasing power is swalatie

But computave shopping into parky an exercise in materialism. Acquiring goods, revolve Astoci, is less simplificant to the computave shopper than the "with to be recognized and apprecisited by sitch clarks and by people who will recove the terms as gifts."—Mast Long.

"When / was a boy / was told that anybody could become Plasidant, 7m beginning to below it "



Keeping hook of people is energy if you have a sparse chars, but far these who can the rest of being leatespars), is new projectable honoring device may be a Mesarce

VE GOT YOU UNDER

Once only the stuff of spy

siones electorica homng denos, which were suppose addy importante under the electorical agent to brain the whetherbouls, may scott broteau to brain the inchrangeed Deniel Maria a pitetic and Deniel Maria apitetic and Broa Ratos, Roinda, hesi Roca Ratos, Roinda, hesi Roca Ratos, Roinda In plattic Under Maria and Braggadaly mipfanto babind the ear Mice and ear upgadaly mipfanto babind the ear durated will send a goather and will send a guarther and will send a some of an

Callular telephone antennas, now common in many obes in the United States, would pick up the signal from the homing device and relay diplomate and ther families if to a computer at a But he also thinks it could be

monitoring station. The computer would calculate the person sponton by determining in which detection the agents was traveling which it reached the instemats. "A person is location could be the storal." More entian on the storal." More entian on the storal.

In addition, each device will be programmed to give off a unique signal at preset intervite. "They are like electronic galage openas," Nen says. "They all look the same, but they don't all act the same."

Man beleves his intenton's primary use will be for people who are at risk of being kichiepped, rach as adjustment and there is transfer adjustment and there is transfer adjustment of descene who have wandproot (4) and to keep their of preasures out on a patient or unanyous of the on patient or unanyous of the one of the baselines in the one of the baseline of the one of the one of the baseline of the one of the one of the baseline of the one of the one of the baseline of the one of the

"Convictions are more disrigerous enemies of truth than tes "

--- Exectsich Netzsche

VODKA TONIC

A drink a day may be uset what the doctor ordered for people who take day doces of aspen or anti-inflammatory drugs, await to Euronder Klam of Lethnige Regional Hospital in Alberts, Canada

Kian third the collections at Lethicg brund that the storact himings of regular approximates were agomissarily less intramed if the himing the approximates a weak aborbitic bewagap provide himing the approximates and barry to use why small himing the approximate and the barry to use why small himing the approximate and the barry to use the second barry to the second himing to do with increasing production of the hierarce production of the hierarce

Kean emphasizes that people should not drivik heavily and then take aspan. Dut, he says, 'a ap of sherry here and those wouldn't hard "--Paul McCarithy



A weak dask before taking superior may apolite the started



CONTINUUM

OH, LITTLE TOWN OF

called el-Arss, rear the mouth

45 OWN



-Rts Man Derman

actually saw them "They

Sherry Rolots

"It is desparous for a national -Furnish McCarthy

"Recovering its men's ability to



ARTICLE

Have computer hackers found the perfect relationship in love bytes and data dates?

ROBOPSYCHOLOGY

BY ROSEMARIE ROBOTHAM

Provide the second seco

Mechanical Man Corporation in Schenectedy, New York, Calvins (or is to matter rebotio intelligence in all all sownthree datail. Her into gray hair, chown sowrally back, machines her sharp gray eyes. Labered bytworn her journel.

etas i he were krangenari, alte readity admits that alte prefers the pristine logic of her robots to the chaoko imputass that govern her fellow humen boings

Calvin's sobols absorb her completely she is obersed

PAINTING BY RALPH MCQUARRIE

with at Reside Intelligence and an environmentation of the second secon

a. Encry anno division division division division division divisione divisione divisione di la construccióne della divisione di la construccióne di la construccióne divisione di la construccióne di la construc

codes, he understands that to achieve the most extravegent successes, human and machine must begin to think as give

Like Cohen the wizards and whiz lads of the corrector age have been stereowhen and branded as macrulable spthe kinatic antisocial tringe, loners infatusted with the infinite permutations of therapists tell us, are accually isolated matte prochologically they resemple addets hungering for control forcond food, sleep, and ass, in purisul of the soltary, aimost sexual thril of matching with with the computer Some hackens even have "a real criminal bant," according to one paychologist.

the computer age is that an observe relationship with the machine is almost a contexcuisite for its mastery. This most grited users oftan turn out to load the most solated lives, in which human contact occurs primarily by technological means progressively retreat into a world proun-

Program in Science, Technology, and Society, was among the first to identify the dangers of computer users' succumbcompensation without the mutuality and No observes in The Second Sulf Comcaders and the Humps Scant

At least one psychologiet, Timothy Lynch, argues that the study of the compa/wy age pathology of lowing a machine and observe nature of the bond botween man and his intelligent machines. Lynch is president of New Wine Consultacts a North Quercy Massachusetts, firm ton. He speculates that he's the nations only repopulationant but is confident computer use will open a new area of soocialization in the discipline of pre-Association has yet to approve the term

ciams, movitably affects the user's enorcinform about social interaction. "The up to twelve hours at a stretch in front of a terminal, begins to crave logic and orespecially human relations "To research the effects of marathon compuler use on programmers relationship with the computer, his human relationships, and his percention of the computer's effect of tenset and others. Signund, Lynotis 'research' assistant," an arthroad minitonce program concluded the miniverwe in a conversational style and asked follow-up questions based on the content from the 60 programmers who partopaled in the study

Lynch decovered an almost uniform style of social staraction among his rorelationships to be like the relations they have with the computer-intense, ritel-"They don't want to put a lot of work #to establishing relationships but prefer to

In a separate study. Carole Adrenne most di meles between the ages of fau-

6/m not married." he says, "unless you count the computers //we failen in love with" His first Irun Radio Shack Then Anita Atan Aphrodite the Apple. Sink Vin and Kooky Casio 9

on the gampt of economorpic backgrounds Hackors, Adverne maintains pulars instantaneously -- she stepsher throp in black and white" The hackpro-Advecce stanceard described livery They sad they were bored in school Most considered themselves lowest and and The computer or through if "As a prace Adverse stars. They include rowhild held heat called soort death" custing the bodies to the limit, forgoing sloop, food countra down targe arrounts of calligne Dress appearance and personal hygione are unimportant to them

Consider Fuse Walter & 'computer residence' as he calls hment Pale and he twiftes the modern computer hecker in one unerganoral sense his is, duting Traveling two-day computer course a contine or uncident his hardly sleeps and seldom keaves his drufty eight-room parhouse on a skeepy working class street in Somerville, Massachusetts, Forty Water wrote and published the feet 17page edition of the underground backer ic, utterly comprehensive tour of the computer culture have been sold. Now in Is theteenth porting The Guide has grown to \$09 pages, sells for the kirk umo set, and is recommended reading for several policip computer science nourses including those at St. John's University in Jamaica, Now York and

Water's phone number is lated on page 1 and callers-sometimes as many as 200 a day-dal in from regions as tarmote above calls i'm not manied' he says, unless you count the remanous computers (ve taken in love with" Let's "She spent most of her the new or in my bed and when I was away from her I had the urge to communicate by radio. Then there were some 30 other groupes. Wreto Aton she was a great one, she had Aphrodite the Apple Baby Blue, my first TEM PC: Burgerio Bonner Kooky Cerlo Shrik Min. Territula Tatle with her Toxias Instruments and Goop the locardinia Clown, another Radio Sheck computer

The proces proce Water hurses around brary shelves to answer #. On the kno is a man calling from Taxas, he can't hook two PCs together using Easy Net softworn Water intern with prows krated. he shoulders hunched up providing even in farious concentration New York born. New Jersey taxed he trop questions at the Takan in clapped East Coast tones. his tingers rille through a stuffed Rotodies. Walter is hardly charty, he pumps mass. There are five screws on the back of your Leveling Edge," he explains to a caller from North Carolina who doesn't know how to install a hard card in his computer 'Go and look III wat 'There a an intermentia pause before Walter and been of the cover For no other mason than a person for

computers Walter commits his days and notes to spreading the tophysioscal occosi "Nothoo is more important to ma then being there to help some desporate person understand computers" he says "Loan sit been late at might tealing many heip someone the person says therk you and I feel. Gee. / did spreidinto upplu tonight He adds. "The thing about the waite at the torehord of technology and

you have everybody also following you

Allaptier, Weiterweis composity mutsito franzig ouzers Her mayer in mathet (barrough College in the Sonia, rubbry shouldins with a cowly colle of computer Michola who waite their damaglasses the target on computer tanguage to be inverted. Allar earning a meaters in and regimetion regimetration and the trade hard regimetion regimetration. Before the hard regimetion and the trade angres of whether to ploop all the hardware appears of killed india when i views georeing up the sever matter of hardware.

boay Where is considered an outsile for black for line work, or one course in comparison to triggle the 46 casher comparison of the second second second percentre in the second second second second to entry in by the second second

Its the indiction question as well as the phonomenon of social indiverse entropy intervention of social indiverse psychologicals obtaining incident more clooply now than in the days ballow Preinsignme make the computer (all Main of the Vitar Computer following defines they year—1982—as the dawn of the modern computer age

But it softwart to obten werk gar the mathem is to service intra log contains an utriality instances with the comsister. Dersparts along parental year with the service interpretation of the bolds and other origin along and the bolds and other origin along and the parent Keyne. A content or processes and parent werk on contents contents on potent torsets and on unany hereits the colorang boarded could be never may will be table in oblight much be been werk torsets oper the mathem to the owner torsets oper the mathematics the werk torsets oper the mathematics the set board and oblight on the set of the table on individual to the set of the table on individual to the table of the table on individual to the set of the werk torsets oper the mathematics the corres addreds?

Michael Parket, an MIT computer sp-

ana major tem Drange California com Nassis huf te Insuently catalos te boundanes of rational bonues. "Com catalosis." Here an encoder catalosis. "Here some na encoder catalosis." Here com, spooning con genicol (Mithuer patel Kon a succeptor before the open reflexibulity on a succeptor below the open reflexibulity on a succeptor below temperature and the com patient (Mithuer patel Kon a succeptor below below temperature). The patient bolt of the company of the company and the company of the company of the company is not succeptor patient and the company of the company of the company patient and the company of the company of the company patient and the company of the company of the company patient and the company of the company of the company patient and the company of the company of the company patient and the company of the company of the company patient and the company of the company of the company patient and the company of the company patient and the company of the company of

"Pike admit his university to be a subindentical even by the boost in our put of the built hadkin it haven y compare cesison as lived a bind haven y compare the instance of the state of the haven as a subindentify the sub-the state of the or a data paper. If his base the me of a data paper is the the the the of a data paper. If his base the me of the and an admit have the his base and an admit have the sub-the and the sub-the method. The sume sub-the sub-the issues and the sub-the history to the pison bey here a bad to be pison bey here yas pay out popart is buy avec outring porced."

One study by ticnolatic installence howwer suggest had computes are not at addicted as paytologies portre, nor where near an indicative study as automotion where near an indicative study as automotion of the woods of all near additional participant Joseph Georgrants, the New York Univerity porticisary in the directed the receivant "Micros actually servicing, taking the site an isolarity tende cather."

Brownie sindy market on open receivers. The wave strengther wave strengther and the strengther and the strengther and the strengther that the strengther and the strengther an

MIT's Contine protector of science Marvin Micsky—spiniaal geditatier of hackkin—schoot the present trand by psychologiasi and sciencigner traved psychologiasi and sciencigner traved psychologiasi and sciencigner traved dictive personalities. Two heard is lot of instructione properties that hackant

Now you can have Vortee V-6 power for your new Jimmy.

Pick the optional 4.3-liter fuelinjected Vorteo engine and you'll have the most powerful V-6 availatale in the size truck today.

This high tech engine pumps out 1900 horospower at 4,000 ppm and a big 250 lbert torque at 2,800 ppm. Theirs enough to put 5,500 kps, including trafer and carpo, when properly equipped, it also means that on the test mack the alimity goes from 0 60

track the Jimmy goes from 0-60 mph in 11.9 seconds.

So pick the truck that packs the power. The S-15 Jammy from GMC Truck





NOTHING ATTRACTS LIKE THE IMDRTED TASTE OF BOMBAY GIN. COMMERCIPACION OF A DESCRIPTION OF A DES

Mereky scoffs "The truth is, obsession is sprawty tass become bland and nonproduring especially technically." Mirphy termed addicted, although he prefers to really not so different from sports addicton Most people think it's all not till wetch sourts for several hours a day, and we certarily don't have psychologists ad-

As for the performal of backers as emoas many different ways of dealing with emotion as faret are hackers Thry/ro Minsky says that hackers are no different. who are serious about their work.

To a hacker, a proce of software is a pave themselves as the Remassance men of the modern age shapers of fucround For all their reputed disdain of of OWN

young men who talk about hww.tom.

Nothing must come between a hacker a program information must be freely call them worksholds. But he means, "It's that they explore for the future eood of technology the computer estarchy of attitude that gets some backers in trauble with the law, earning them a reputation as modern-day outlaws. The phone company is always a fevorite target NASA and New York's Memorial Sloan-Kotonon Concer Center also have hed encounters with electronic trespassers, promoting some states to enact legislatoo making it denies to patch in offer peoples systems Hackers poach anyhourty their technological witerdry nets card rumbers, or actual mail-order goods, including computer hardware

> waard introdely Herhusband Ian Murphy-the legendary Captain Zap of the computer belagand prous-became one of the first of a brash pronotion of backers to be arrested for electronic fraud in 1981 Captan Zap was the intoleader of

a cross of the backers who with the ap-\$212,000 in long-distance phone bills and reviewed \$200,000 worth of computer hardware, charging the purchases to

Nurseng a Colle in the camiv it lounge of Philadelicitia's Hershey Hotel, Addenne contemplates the flackers. The creatures of the right" she interviewed "They learn while everyone else is sleeping, and that enhances they sense of a secret society," she says. "They were an addressive bunch. They give themwhere still cover names like Mationd with computers, they get to do things they couldn't do in coal life. The words full parme up most often were oblinarate. owncome challenge and he "These lods were not particularly educated in the "and they clidin't really care. There was a miting crimes that didn't hart arwone.

Admonte contends that as federal lava coverning computer security become more numerous and clearer and increasing numbers of people gain lamicrolife will change "To these kats." Acincone saws "computers were new They were a special, rare tool in ten to twenty case to computers that hacker newtholony' will be a fact of our outure " Hackers uses for a function's peculiar social bent, and husinesses will device wive to benwat boldly imaginative intellect. In such a society, the hackers' defining principles. puter dabbiers would learn to value the backets' sist-motion culture which at Turkiz's words, is "a culture of manager individualism, nonsensuality' one that values "completely and raik m relation shos with things, and serplicity and safety in relatoristics with people

M Di Minaky disastees with such coworld' he says "We're not becaming a coming a society in which a few people peoplem. Minsky accurs us instructs and The computer presence in the classmont is a little bit against the brin' be ence program" The result. Minsky pro- help Empty coffee cups lie forgotten

dicts is that the gap in understanding

Ceptain Zap, aka lan Murphy has he rafter retreat into silicon workts. "The nests, they wear these studied gold chains called I mean, most people are so in

of Phéocelofte, in a part of town that Throwing the door open, Murphy says, Tim not very good with humans." A few

Adunton offuses to live bern The that it is up-and-coming, is not to her tasks meke up for other deficiencies in the sci- Murchy's housekeeping tablis do not

arritono papers and electronic cardontry. pinos line every wall. Sall. Adhenne and translatoc' Murphy gens "I say. Screw offit and she says, What Mr Mulphy means as

COLUMN .

arrenal is arranged on tables. Murnhv is master of all this hardware, three comchopping games, and a system of closed Typically Captain Zap surfaces some-

time around noon scours newspapers Ni four AM written articles on computer computer bulletin boards, communing with other backers.

"Hell, no, I'm not a computer addic!" Murphy scow's at the impertmence of the question Short partoy with thick bland in skeptigam Murphy sees soy plots overvehere in a buned newspaper tem pert among them-who reportedly vain a recent Time article about a hacker



BY RICHARD MATHESON

People under pressure let themselves get bent out of shape over the oddest, not to mention smallest, things

PAINTING BY BERNARD DURIN A try descended in an along plummet, landing on the desk top, several inches from the edge of Pretamen's right hand

Automatically he made a brushing revenant sovied it and the By ap peared to leap up, soaring into the sil

Preserves continued reading the contract, then stopped to resee his left hand from the desix and make a thrusting mosam with a cas the edge of his thrustened was pulled back from his watch. Thirteen minutes whith twelve. Typical of Matters, My monity, early well.

Pressmen lad eade his part to know the back of his nack, which at the part is caused. A host-ache in the official Mayte he straight lake another acore

His laugh was like a cough. God forted he recked himself. His blood was discloless nearing the consistency of water after all the separa heid been downing in the pad fee weeks.

He closed his eyes and rubbed them, growing softy. Come on, Masters

Something located like back of his right transit, and his twitched, leyes opening in ame to see the by take off and deseption again. How little shut? he multiprod

He turned his high blocked cher to take the window. The fly was on the window sill. At his it dean timow. Than as Pressman walched intently it begins to stroke is less together.

Little aware he shought, your logs and body swarming with germs. Under socially, he rubbed the legans of his loft hand on the back of his right.

He checked his watch agen. Glose to quarter after. See you at ricon. Wen he heard Massani' superclicus voice in hie heard Buse Dd. In speck petcose.

He exercit at the hy workdempilit were consolute of this observations. They drive the exerce way propied dd. Compound the word floated up in monitor up floateness and dt memory all owner housed of them in each rive. No worthey was address even of them is not wrough even or the even of them of the owner.

There was a soft knock on the door and Pressman turned his other back, conscisus, as he did, of the by taking off

Doroten was peening in "Tm going to kunch. Mr Preservan" He notided and the began to close the door then opened it again as Preservan asked. Did Mastern cell about our meeting?

"No se" She shock her head

He sighted "Tiguees I won't be having lanch today."

Doroen similed poliety and closed the door A lot you care. Prestman thought the grimaced at a stability per in the somech Much good it would de tim to have functi, anyway He imaged sere as usual. Figured with colowebt of gas

Picking up his pers he started locking at the Barker contract once again. May as well do something useful while he wasted for Mastera to antive

The fly blurred across his eyeline, then to care

deopped to the clock. "Get out of here," he matered, slepping at it backhand. The fly celled yoward. Wid stay away, "he told in the first a rentation one first to

He tred to constratiate on the contract, but a twinge of disconflort hill he scenaria again and he straightened up, a tight expression on his lace. He toolkid across his office coward the small reflexcator underneght the bat A glass of whit, he soft himself. Case your atomics walls with acothere occome.

Publing back the chait has also the data form of the fly aveces down and link or the contract Good, you read? I've multered; tasksting 'te waked to the rotingeases, teamed own, and operated the down panets down and operated the down panets down and operated the down panet down apout with disclosed the operand the apout with disclosed to back if your the perk, pouring mult with it, spalling some because of the form spoul.

Returning to the cleak, he saw that this

6 He picked up his pen and started reading, then slammed his pen down, grabbed the glass of milk, and spun his chair toward the window. The throbbing in his head was getting worse?

by was shill on the contract, rubbing its legs together. Don't worry about polying shif on the contract, he addressed it in he mind. It's a piece of shif shredy.

He sation tes cheet and the By was gone Jesus Chest, may wore fast he thought. He tooks a pp of mix and led the glass down, looking at his watch again. You bastand he lineaget, Whet do you dered for stack here, terms out in J609?

He picked up this pen and dated reading the contract, then element his pen down gestabled the plans of mix and spun the chair toward the wholew. The twobbarg in the heat were getting worse Presenen tools another sign and abared out at the city. Gray the thought. Other lass: "Like my like, he heard tensel says."

He kneecked the back of his nock some more heath set against the peen

Your neck muscles need stations, Royhe head Dr. Kriby a wood. Do some somalines or they'll strophy. "Think you, Dr. Kribs" he mutered

Thems you, Dr. Krity, Tie mubles and then skepped down of his left log with a look of suddem anger iss the thy landed on it. Prostmen grouned as pain exploded in his head

Graduely, the own deminished and the sumed his char back to the desk, setting down the glass Maybe he should just longet about withing for Masters. Size stang, he told hemself. Who needs a twohundled mousand-stafur dial?

The headache was expending Pressman closed his eyes II only ho-

He generating that all the ty daths down on it. His eyes jumped open but healty had already gone. 'Son it a block' he muttered. Good he hated fries. Always had Filtry vermin Strolling on crap then on our Caesar solids.

Justiny to calm down will you? he told himself. He looked at the glass of mills. Maybe he could plop two Alka Settrats mit, fez it up Combination Cooktes. Excounce all will be

The fly came awageng down and lighted on his dosk beside the glass of mik Ho oved it combinity And know

He had to kill k

Preseman drew in a long side treatment Cold that help been walking if with not quies else cursary but cellarly whiteu intert. Absorbed in more integral matios, true-interest in attackers but to may the command, the attackers but to may the constraint, the attackers but to may the constraint, the attackers were at least. Their was odd. "Wir Fly you have to die" the amounced

Ha toxical around Wespon of choso? Ha grunned with amusement. Bastierth comment might be good. He vesalized Bastiers budyn revolution maintig de he cought eight of a dab of fly guts perfolity obscung. Palagraph Three, item Ohi No. better not

Carefully, he searched to he right with assaud open the matche drawer of his deals. The properties for Emploide industwer/Parket Thin emough to believe assault new ensuing, dearword blow hell with one sites downword blow protects you have able and with Avraidia in on the way that add a for more

Plasman draw out the prospectial with observe bioveness. Take paid drine, to kild tenses Phaseve must protomente. Let the programs overly moount inkeining up his postdamm hear the tags. He tofacte the prospectation crost the regression of the prospectation of the tenseves law application of Doom. He requested informae averagement of pages possible, annument e 2 and the prospectation of the Sale.

He kept his gaze field on the fy. They have to take off beckward, he recalled Have to onspit the Juggermail Prospectus well befand it catch that little are as it was zooming upward to the relat.

Presentar clanched his tooth, gimeo ing, No. The By was too obse to the glassihe might shatter it and splash milk overywhere, sole the contract. Would's too

He narrowed his eyes, considered. The hunter must outwin the hunted. And outwrither. Reaching out, he flicked the fingers of his right hand toward the by it shot up, venething Pressman hell a pang of anaxous deseptiontment His shock it of Hin To back he reasource himself. He leaned back in his chair and warad. This Casal Whee Hunter huntering warad. Anay grass, offitted vers observing, weepon on his key, parmad to ke Pressmen chunded at the image.

The IIIy did not return. Pressman scowed and checked he watch Jassa Divis. Teelve Fucking Inity scon. He should have had Donein call Masters of fear moments prior to noch to make sure he was corring.

Preserve found timed guarry at the isoning intergents along the back object of the desk. Benda L. Javin, Ken the reached invariant is packet to windraw the pack of capacitas. On left hinteen add hard rask times which theorem tasked the curves which theorem wastebaset. Exhibiting smalls, the folder wastebaset. Exhibiting smalls, the folder hidding, in the "Souring in the back" Halay, in the "Souring in the back" Wastiff is a backing in the back?

Wright in a fermiel? The thought Prepart. With a bathful of logge Jesus. Now he maily had to kill in Prevent fuser dozers-standeds, maybe-of fuser doztom loaling up the office Laprous magpas wrighing on its drapes and carpeting. The image nauveiled him.

He stand, again, at the photographs When was fee last time he did \$167" Ages They were backdrop, nothing more Life propal Decoration Yet here he was staring at them

At Brends, forty-one, red-heated (ocursay of mass, not of nature), two foot so, a hundred fifty pounds, unpleasantly pump, heat let an use to sail her for some me now Vestigen of heat bright face herd gone appendix our eighteen years ago have overlaid with the unpleasant. We are not amused look

He looked around in intation. Well, where the half aro you, you it ta shift? The asked the uneers fly. "You're not gomta get awley from me, so let a stop the horsatiae and and."

He closed his eyes wincing The headenhe again. "Some if "Auling cut the top chosen of the desk he publied up the applier bottle pried of its cap and shock the last two tablets from make Held method the new bottle alwards?"

He washed the aspin down with a sp of mix and set the gase back on the deal. 27 As a Now we've got the moans". He submerged the tip of his right index finger the the mix, then dabbed a smear of it across the top of his deals. But

He leared back in his charriagan. Gwa up, baast surrandin, Moro is no occape With any luck, you'll romcantele in beinty rescords anyway.

Presentin tools a deep pull on the cigaretis and coughed. Like a gooldamin Ansace blied inside my mouth and thread With sudden anger, he stabilized his cig-



arche into the ashtray mashing it to a pulp of papele and tobacco. Kill you belara you kill me,' he multimed

He looked for the fly No sign of it. Well, I can wait, you kille chiap, he thought / have a brain 'Ru have shit Recks on your leas. No contest 'Ru'he a some.

The looked at Brendu's photograph again Jasus what a pontees life this women led? Well helt, think done her tresh he aikd aedoncasy. God knew she reminded him oil it often enough 1 Ve done my time Roy? As though this mannage and her motherhood had been benty wears in thir

He wondered if she was having an alfair Timewas, highly feasible Assuming she could effect some Magic Mameria from her quest to purchase every got dams female adomment in the dhi

He stored all Laure's photograph. Alexif an application Merce, has Thought a bentee of old enhancement twenting of them. This photo was thirteen years old Eause Aero Eaustrys ogt, he anges the delight. Pohigh softicid, pao eause apportmentation "Persentran applicable" her-stored and the moody, with disensing applicable that former table with onlines of the car estimatement the house. Is took of eaux estimatements from the posteries a book of eaux estimatements.

And liken Hie glaned of the photograph of the son. Challes in parallalant reladance in the calls. Car impounded, in surance canceled, accordent this linpanding. Drught What elect "Thered base the abort term bout with many arm now what way of "Coosend" There and one was a set of the call of the induce He and Ken had now had a reboorable tay bare well for there. Jesus Accr actions and applying work call in the?"

A detrog investment closed of respections advin weither in the second of the sections advin weither the time adepunpt of to booknam with the table of the second seco

There it was, on the back edge of the dask. Pressman pushed up slowly to tell rest. All right, you abit the named the prospectus carefully Mr Fix, your life is at its welforchs, scalarly way Expt-

"--row" he cred swriging downward concentrating on puting a hard snap on the loided prospectile. Got yal" he reuted through clenching loidh

He looked at the desk, smile techng Wet a second, said a voice inside his head, perplexed offended He looked at the prospectus Nothing

"How could I miss?" he muteraid. "How the fucking hell could I miss?"

He winced. Those pains in his gut again midgets aliditing at his stomach walls with tazer blades "God "he said He closed his eyes. The hestache had swelled, too "God damn it, one thing at

CONTINUED ON DALE SE





he drug tosi on John Keats in a windowless lab in Los Angeles, 164 years after his death. Threy also tested Cord Byron, who died in 1824, a few years after Keats. Only one of the posts, John masters of

BY GURNEY WILLIAMS III

the Bonarzic etc. came au clear. The security of the local basis classes of the newsprint from an embasis the thread of the classes of manufacture in the security of the data security of manufacture in the security of the UCLA Security of Medican and Security of the UCLA Security of Medicana, average that be accounting neutry basis of chainpages would mell. Nuclear modifiers of the accounting and the final stand a weighter makes the basis areas were then been approximated the security of the security of

*1 Woo very nervous, and anys two had only is couple of hairs. " She and Segel and charins: Wenner Baumpanheir wene running chug tests, on just a few strands tech Byron and only two strands the object sumst. Itom Keets.

These relies in a licence acquired from the source in react investigation of the matter from cooper of structures of the line from form across the source in the line in the line from our source of structures of the line interference of parts in the source of the line of and the line of the line of the line of and the line of the line of the line of and the line of the line of the line of and the line of line of the line of the line of line of the line of the line of line of the line of line of the line of li

To be use: the technology tall here is instatures. I composite in millione be used to monitor tall and or drug use on a data be a fund in the method of distribution. A final been adventised as a mean of dispose any values and immedial deductions. If the servey cannot detect Norshinalism in the method water of the server water have any or disposed instants with one have any or disposed instants with one method water of boots and the first previous of the conflictment of the Million of th

In task according to summa the twice of some large-based periodiarity may already trave yielded access term the parel in the periodia sources that the periodia of by E. so covariant sources are president with the access of the sources president in the test and the sources in the source president in the large in the Late years of the Via Second angle. The uppers 8 cmm to Via Second angle. The uppers 8 cmm to Via Second angle. The uppers 8 cmm to Via Second and any 1 for each or the Via Second and any 1 for each or the Via Second and any 1 for each or the counter in theory area assisted user the counter in theory area.

Uncellnused the politicians stoples of alcotol and tobecco. Segel adds. "But he publicly denied it and diamad to be an abdame. Drugscore records Segel examined show that car assessful pro-

dent bougt beandy linement containing territopic, and cough candy losed with a option. Work we can place from with alcohol many imary times, including while the was a politicant both in the Sense and as Preventert."

Compare and predictions are not here Specific har these particular there from conductors and endourse in related on the posttion of the second se

Where does the Ayatoliah get his hair cut? What could we learn from it? It's easy to magine agents at Camp Devid scooping hair from the drains after foregr insisters have left.

about new techniques of heir ensiyes, but she decires further command

I policiaria begin uang mere hair song or awanng hannels or loopans to alege evolves out of the hands of her enames, some of the orest will go to who bagai and Hill so the Kestellitym mouls in 198 Bourgenter at its wile. Armete came up with a wayto delve mits in a se said uano octobactive potters.

The serving a called this subary meansains of late (HAH Ant profile backward) Bar, Barrgertwa way file easer way to understand the profession to park of a use and of modeling masspeople and ammonitor the profession backward and the service of the service medical medical match future and test sources that resume lowage medical medical match future and test sources and the service of the test sources and the service of the service medical med

is captured by a given amount of antibody. This court gives them a blass of comparison for later courts.

Then in other test tubes they multiknown chug with a desolved hair from, say, Kees Finally tasy acid a carefully maidLined amount of antibody.

Now, it the har contains dispances call chains begins." Bourgetter two, The hid doug molecules controlled for the landed or foold day molecules touth in the har if the cold molecules takes to come of the antikody chains. The redoactivity count of the antikody will be lower type that of a doug-two schedulance.

"Burgerstand Buschladt Frit L effetter of the packs studies optime in staudu last Byters, Bie in weak missie infoliated in the data packs studies and a start start and an optime studies and a start start and an optime start start and a start start and an optime start start and a start start and passe start decrempt, who is deglated with the starts of the start of the start and passe start decrempt, who is deglated with the start of the start of the start of the start and the start of the start of the start start and the start of the start start start and the start of the start start start and the start of the start of the start start start which pattern and the start start start which pattern and the start start which pattern and the start start start which pattern and the start start start start start start start start which pattern and the start st

We bushed Kpast!" Seget seat and popped the cork so the triste measurchers could load the technology

We didn't really bust instancy: Baumgether anys locky in all keathood the morphies we busic acre in the landerum a widely presented paralleing instance of plan. Keats probably tool is in the late of this where the began acitering the test symptoms of the bubchwe that lated from two serves tober.

Baget though guesses hat heats was pockedly dependent on obtain, whose acrea representation on participation of the second op in the test. That's consistent Steps rays with reports from Keetich celesques shortly before he gave away the look of his hear.

Che weda that he seemed "distructifand without the look of falscrine alerneowifelm was of haracterise do it im And a about the same time, owe of Natios operer, Hyperen insid out an intentry of the opame abatis tro" Upon the gross auugbid hading generic the does meaning opters but in varin. The cloudy secon reverse on cost doest lenks.

No one knows whether Kaals was a closet addet or an optosonal user that with addet and an optosonal user this opleagues probably could have constructed a detailed calender of Kestis usapp or tobaneroe

Indeed har grows at the rate of about one centimeter a month. And each month drugs leave trace amounts within the nativens contax—an error layer of the train

Previous pages. Photomecogniph of a 560 non of tuesten scalp. John Kaultz (miel)

two and a halt months of drug history. In bath The alcohol shampoo dislociges tolo Residue like manjuana smoka for example, or occaine dust stands out like

of usage. The cutcle test can often tell Notiong ago Siegelused both tests in

an investigation of two Florida man acraused of selling conaine. Their story was feress afterneys called Saged to buttrass

consistent with occarre abuse. Second segment of heir And we were using pugive a record as far back as four years

scalo har thet was discusting to the de-

hunch he took further semples from their checked the wash solution for drups. The

actly what you'd expect from someone working at a banch, with exposed arms, to settle on their has

They could have shaved and smoked what they did offer they work to jail?

random samples of convicts' her to devoe petroms of drug use befind bers has sportened since 1985 show drug traces IPCP manuaria coseina, her on-you rever it. they've used it recently, he says of the unpublished, m-

est he says because security is tott Chystmae We see a lot of opcane at get also noticed that the defendants al- Christman," he says, "prosumethy smup- quarter inches long gied to presenters inside presents

Jim Bast substance abuse coordinedrugs but adds that he has no evidence of higher drug use during Christmas Segel's Indings will edd, knowledge

American pais are evidence of an omiciety,' he says 'even in places where we

har washings and the contex can settle

twatty five year old deputy district after bally to provide a unne sample. Eventusystem by drinking gallons of water Months later, when Siegel entered the case, he cut a har sample so and a

'It had been growing several months

It is one of the smoothest, finest experiences in the world.



har cleared him without a trial Drug-free har played a key role in ancovered a cancerous growth in his storn-

ach A test of preserved abdominal specimens earlier in this penalty occcluded that a pertorward paper ulcar in the 1960's several researchers pub-Ished sinister stones that Napoldon had Using comperatively crude chemical maying, some of the consorrery theocontent in serroles of the emperor's hair

sometimes made a gift of his hair to visiconfer tourism pens on political alles And at Nacoldon's death, ive value at peror a head to collect some intenate mamentos most of them given to membara

ciens certified that the whiteness in his

nostria was the result of a dry sket con-

Not a drop of exaggeration.

prior to the arrest.' Sected said, 'and it of the Bonaparte family Analysis ind- the poiston that laced his air could have dition Theirtestmony and historig, clean Eightes, however underput the pospoplot theory. Three Totonto researchers

> naciantivis hair But the level was nonposonous. They did discover a 'moderalriv accounted" level of actionory aporther metallic element, and suggested that the

> But a more recent investigation by Britperor's hair carried a spritz of arsenst Damp wellpaper was the culorit, accord-

The porton was an ingrepient in some rists houses in the late-orghteenth cenbry As these houses ages, many seerecognized the danger in the colorings a

aging wallpaper could kill people They volatile, posonous aniento trensthet. Even

deed, a few years and Linversity of able to describe the eating habits of two caused different elements in the har to lengths. He noticed that the concentral tons of elements varied along a single shaft indeating that the levels of zinc and mercury fluctuated from season to sea mals whose meat wild high in zing. Mer stable was lish Recently. Tonbara recognoted a delinitive pattern in the her ago. Tonbara says, until he want to sail and got off the bottle Later har analysis

But the use of heir analysis to duminate crets scientists can use har to obtein a

Le Cognac de Napoleon 4



62 OMM





PHOTOGRAPHS BY MIKE MITCHELL

In block the area had below the prove such of the SPA of the PA 2000 CH proves such of the SPA of the PA 2000 CH proves such of the SPA of the PA 2000 CH proves such of the SPA of the SP

RANDAL SIX WORLAND MIDDLE SCHOOL WORLAND, WYOMING

Eighth grader Randel wanted a safe but cheap way to heat has backgard drived. So he created a solar heater made out of 20 soda carso painted black. The sun heats the inside of the cans, and a small fan pushes the warm air through a verheaten heat. The text of air comes out 1067°







MATTHEW GHORMLEY EFFERSON JUNIOR HIGH SCHOOL OAK RIDGE, TENNESSEE

Matthew's device (below), a wooder cross that attaches to a musician's chair, prevents his unwebly cells from slipping and slading while he phys. Matthew, new in such grade. I has played cells for four 1. years. The invention can be biblish to fit



CAITELIN McCRACKEN WAWALOAM SCHOOL, EXETER, RHODE ISLAND

Cablin, a third grader, called pet stores before developing her orphanikation lender (jet) and berev kitt), she took a platic baky bethe and adapted ii by adding multiple reports. Not only is it it mover, but Cablin also between that "being obsei together histo comared interna tool like flay are sole with ther another."



COLLIN HAZEN LEWIS AND CLARK ELEMENTARY SCHOOL FARGO, NORTH DAKOTA

Collin wanted to protect dogs from nightlinetraffic He made a collar with battary-powered lights "People know to stay away from care, but not all awants do," coplanes the list graziee.

ANDY NARDAKER STOCKTON ELEMENTARY SCHOOL JACKSONVILLE, FLOREDA

FLORIDA Andy designed an infatiable underweiter gom (nght and far helt). Says this filthgrade stadent. There shopped for woter toys and have never seen



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LeSAGE WISNIEWSKI ARTHUR MIDDLETON SCHOOL WALDORE MARYLAND

When LaGoge grows up, she wants to follow in him mether is lootstypes and become a tracher is the meantime she's more concerned with tet-ing her left foor from her light. Kats seen to



have the problem," says LaBage, in kindlergart-ner, Her solution: The "Sur-loader" helps chil-chen defarmine which aliae geles which so core stigaring each theor's more curve with the core.

SACHIN PATEL ST. ROSE GRADE SCHOOL SCHULENBURG, TEXAS

This Hwd grader a solar furneseliupercenduc-tive electrical generator (next page) had invent Americal (udget Blove Woomsk (Apple Com-puter colourder) and Gondan Gould (aser in-ventix) appray over ta fossibility Sachina idea





Interest no memory reasonance in superconduc-tive metal weak, they move electricity without energy loss. (Sachin suggests frey would riso do away with transformers.) His project, which won a neglonal price but doth game to neteroil weak, wist bio (wonth of Kathy Kester, Invest



DANIEL K. COUDRIET JACKSON DAVIS ELEMENTARY SCHOOL, RICHMOND

Duriel created a way to keep the able bodied out of the parking spaces and axide for the hand-copped. The fourth grader equipped a parking meter with a timer. 'A cor entries the handmeter with a timer 'A cor enters the hand-rapportiquees, 'he explains, 'and activities the when dropped Mas-meter II a handicopped card is not used to ufacturers have ex-descrivets the meter, a buzzer and light damining significant in this system go off. The abia-bodied person mustleave the space in order to stop the alarm.



CAM RAINES T. J. ELDER MIDDLE SCHOOL SANDERSVILLE, GEORGIA

Carry's invariant was been of necessity. She has cystic fibross. Two been in the hospital a lot and had to have inflorencus tubes in my arms. Because my vens are hard to find, the nurses have

Liter's dea came to bind man slipping in stek also emits a cloc



TELEVISION

CONTINUED FROM PAGE 10-

company pland and what stopped himself to appear invested if we expose a greater range and weatly of instrucdog available to both candidates, it i had to magne the supner upped occurring interview exposed have colorised the sixcitament Turnan was construe at half-ine reports would have backed of half-ine reports would have backed on half-ine reports would have backed on half-ine public model.

Devery would have had to come and a the very tower there have no calling togetter ins may opermont, and campagniase a calculation resident dimaking declarations as if he were shrough meatable is used to exclusioning without of humans, but Devery had been impresent in measures as a calculating dehict internary works. It is don't use to mission in measures as a calculating dehict internary new York. It is don't use to mission and that to the use done proposed have been tarried in territoric to the use done of provide the state of the use done of provide constraints and the starts of here and provide the state of the starts of the sectors of the provide the starts of the sectors of the sectors of the starts of the sectors of the

In Dewey's case televesion would have lorged on the candidate a bit more bold outcome. The present tendency seems to inculcate more caution. It is painfully chear that a smole patte captured on tele-Senator Joseph Biden lashing out engrity pendidacy Furthermore television is always watching C-SPWN, the gable set ed to raching form mehangia in missant of the time, at the smallest caucus and primany events over though the petwork nows shows are chowing amalier authences The Biden suburst occurred belore a C-SPWN comers but it was instanty transmitted through the networks origing a fight tough in Distant's traubles. over a plagarren chirpe

Boy here both graves a many concessor presentone where both graves presenttions are also been as a second present present terms and present present present present terms and present present present present and the present present present present terms and present present present present and present present present present present and present the strategy that made Lincoln release to give any campaign approximations during the emotionally divisive time between his remmative and the 1981 malagration a time when several status had already second to the work not have let Lincoln remain so alcol focay.

LINCOLN AND WILLIAM SEWARD REPUBLICAN CONVENTION CHICAGO 1860

If selevisor had been accord in 1860, it is extended in the high high Lincoln would have been the Republican nerrines to the provider. The been ways to see the possitie offsets of been ways to see the possitie offsets of been ways to see the poselectron of the second s

What followed was a series of deels

Today television is making candidates play "delense balt" speaking in predetermined sound biles, outting back on question-and answer sessions, and avoiding the spontaneous ?

bries, and day tools the could not have endowed the source of TV. Lincohs managers prevented a tabotary when promag balados. Then they arrived the promag balados. Then they arrived the last of the caporters white beward's tabotary the source of the source of tabotary the source of the source of tabotary the source of the source tabotary the source of the source tabotary the source of the conversions when the the source of them the thomas and of the source of them the thomas of the source of them the thomas and of the source of them the thomas and of the source of the so

In 1880 services docrand the "characback" of hoad Reage and Govelli Food by anny is possibly and electric story, rotanism of hoads Reagen could make up human Lin New Orders in 1980 beau and story apticulation of water prostantial of George Burkin churce of beauto Day had beauto and the story of the story of the heighting one benchor from Induata. Alter the deligence detailors ages delivered from field of the television ages of delivation through the general delivers of part moson.

Imp to Florida with a tamale lobbyest and whether to had enough experience to be President should Bush not be able to complete his term

It is fixed to magnet television reportes not swaming accurd the balls parton in Chicogo In 1550 or the welve-tasker terms of various retended not lighting commen create of on the strength table. In oolsis men were packing the hall with supporters. Down any of thread induction to be television. Seward not Lincolnwoold have been retrimited

Example and a set offer certification of the certif

How such is mer a backnowne wold have copes with the uninvesting ration, no one can know But the outports could used is incelled wrong magnemous guidence. Wold we tryet that a user's accession the "insolver all the United Battle background the state states been facility to an artistigous controlson" (accessing the state) and the states them as a state of the work of the statement of states of them of the activities of states of them of the statement of states of them of them of the statement of states of them of them of them of the statement of states of them of



First this physicist showed how the universe might be the only "free lunch." Next he said it could've been made in "someone else's basement" Now he's proposing that we might create a cosmos in a laboratory

INTERVIEW

aboring in obsourty postdoctoral researchers circain that changed his life were logical propositions, formulating a of suchien success, ferrer, and rewards. Ferw ever savor such truts and in 1979 physics! Alan Guth seamed an unlikely candidate for them In fact, on Thursday December 5, 1979. Outh had apart most of the morning making "rather recommendation for him in his quast for yet another temporary

But alter his family had pone to bed, he finally settled down terrora bear. Demo in the right that Thanking Outly made a class so scientific breakthrough His discovery came not by reading meters on an experimental machine, but from his mind and pencil And it didnot le in his field of expertise. The equations

PHOTOGRAPH BY DAN MCCOV

now idea of what happened in the minutest fragment of a secand after the Big Bang-when the universe had the untrankably high temperature of 10^{re}K (depress absolute)

Buth's decovery was the theory of the inflationary universe ades According to ritiationary theory the universe exploded into recidence at a bir boder rate than had been pradicted by Big Bang theorists. During a lightning flash of time just after the first speck of the universe papped into being, the cosmos began to balloon, doubling in size every 10 ²⁶ second. Although second of the universels life span, it stabilized a cosmos teeterrisi between uncontrolled expension and total collapse. It tams Because of the inflationary model is now possible to see this the growth of the universe is not constanted by the law of conservation of energy. "It becomes very plausible thet our universe emerged team noting or almost notiing: Gut observed

The effects of Guth is "invention" seven basilial ocity And the continues to shalle the scientific community with more curregress ideas, including a proposal for a man made universe. After all, the is fond of saying "for everything we know our universe could have been made in sometinde releast therement".

Born in 1967 to a michain class New Janey Jany Carlo Janey Jany Carlo Janey Lany Carlo Janey Lany Carlo Janey Lany Carlo Janey Jany Carlo Janey Jany Carlo Janey Janewa Janey Janey Janey Janey Janey Janey Janey Janey

By 12/4 Guith had worked at Pinnoton and Columbia, sharpening his skill in particle heavy the starty of subliction to the start of the start of subliction han down for a locally appointment and Guith had moved on Harwas not accouting to heards, a particularly ambitous or and-seeling particult doing physics was and-seeling particil. doing physics was his control joy unaloyed by critikings for stratus. Ho had already extended the lifetime of his appontment in Control Lifewearly by sipping in a one-year reasonth satisfiated at the Starford Linear Accolestor Contro (SLAC). But it was cheer that he was, is he puts it. "meaning the end of the postportune that"

Gui an exessión empleyet a tornulasión of particiat torno final trada timo di teo da particiata torno final trada timo di teo da particiata torno. Timos di teo valas interación Timos del teorem de teor final de la participación de la participación teor de la consolición de la participación de consolición de la del teorem de la del teorem de la consolición de la del teorem de teorem de la consolición de la del teorem de la del consolición de la del teorem de teorem de la del teorem de la del teorem de teorem de la del teorem de la del teorem de teorem de la del teorem de la del teorem de teorem de la del teorem de la del teorem de teorem de la del teorem de la del teorem de teorem de la del teorem de la del teorem de teorem de la del teorem de la del teorem de teorem de la del teorem de la del teorem de teorem de la del teorem de la del teorem de teorem de la del teorem de la del teorem de teorem de la del teorem de la del teorem de teorem de la del teorem de la del teorem de teorem de la del teorem de la del teorem de teorem de la del teorem de la del teorem del teorem de teorem de la del teorem de la del teorem de la del teorem de teorem de la del teorem de la del teorem de la del teorem del teorem de teorem de la del teorem de la del teorem de la del teorem de teorem de la del teorem de la del teorem de la del teorem del teorem de teorem de la del teorem de la del teorem de la del teorem de teorem de la del teorem de la del teorem de la del teorem de teorem de la del teorem de la del teorem de la del teorem de teorem de la del teorem de la del teorem de la del teorem de la del teorem de teorem de la del teorem de la del teorem de la del teorem de teorem de la del teorem del teorem de la del



times this instant of the original oreston Guth argued that Einstein's theory of general relativity should describe gravity accurately enough for his purposes and sept syning to apply GUTs to the initiate stages of the Big Bing.

How too broke the rew proved readacheved version wompet have as solvy that bench high energy physics and any energy provides "high high energy prolements of the second second second second any energy second second second second energy second second second second in a second seco

Occupying a large office at MIT, folday Gath is a tensised polessor seemingly unsouched by famili Physicial Circipory Benford, acence-folion writer and professor at the Lineversity of California, intensor at the Lineversity of California, intensor at the Lineversity of California, intensor at the Lineversity of California, inbased on the Lineversity of California, inbased on the Lineversity of California, inbatewale visits from Students.

Ones Notes procewarms previous thevan Weinback plas (add. "The more the more it also seems comprehensible. The more it also seems porthas. The affort to understand the universe is one of the vary few things that this human its a little above the lived of shos and grees it some of the grace of isopoly". Do you agree with Weinbackting sentimetra?

But it has there are gain a bit of these when I dated before these correctoge lives errected mean that networks and by the way take to the universe. Can's is bidly why gainsy which in their is protein a the visible universe in the context of the visible universe in the context of the visible universe in the context of the error universe the probability with the indext of the universe in the context of the error universe in the probability with one of the universe in the probability with the error universe in the probability with destand why what gases on on out my destand why what gases on on out my universe and the set of the protect in the output out the set of the set of the mean of the set of the set of the destand why what gases on on out my universe output of the protection.

Centre When I was a latter holy lawing A berrain, my molecular altowal on a Chicago skyscoper and about it down in the second state of the second state was and the second state of the second based of No. After all, we mode it may be shown maker mode with a maphat they in the universe is not sen but states in development set that the maph atter internation second state of the second states and they second states and states and states that states and states and states and they second states and stat

Guilt When we look at the history of humarkend—the cultures the set the scercore. The Herston—if is clear that what makes the human race something is the
by our physical size in the universe, but I and tree that the world of steep has all metars and kiloprams

wet know all our science. But #% imposobjective that they'd shock from our Monthing at the universe evolved for this particular bouchers Meets in the long run that it

Guts I agree Given how huge the unwrite access to be it's almost a conprobably far more advanced than we are I hampen to be a spentist, and I erecy being a scientist the most But I believe important to human intellectual evolution If we are to make control with applier cree of technical sophistication. But once the contact with them is estublished. If be more interested in our literature and

vented the inflatoriary scenario, while so

Gath, It just seemed to fail in my lap. At infatori masted at the time I carre info the field I brought this information to- Oney inflation solves the honzon prob-

orther and hed it up with a preity bow After 1 did the work that led to inferring 1 was not in any sense working on a new model for the universe. My intention semfoones in periode physics, the grand united theories (GL/Tal, were consistent with standard cosmology. If i hadrid comb up with inflation, other pacels would have. possibly within a matter of months

Gener You were plant on solving other problems when you tonnulated the inflatonery model Did you have any idee that you were could to make a tassikitrough

Guth Certanly not in fact, I really clidn't inow a cost deal about cosmology all after I discovered the possibility of infiletion. I was at knoch at the Stanford Linear Appeletator Center staff calelona and some people were taking about the "horoon problem 1 soked one of them what the unverse that can be beliens of light it a little bit and appn realized that the acenario I was working on would get around this problem. So I added it to the lat of successes that I'd later mention when I started gying take about the in-

lem by saying that regions of the universe now at perposite actes of the sky were mementaniv in contact before the milasurgenzed who a timy region of space of the becampion. What was, the associon to pulpt for it around the country?

Gathi Inferton seemed to pitch of sui-SLAC I was very nervous. I was worned at any time I also reakeed I clidhit know a int about complexity I womed that even somebody might ask me some elementary question about cosmology and Fd Wantero's book The First Three Minutes mology sinsoft. At the seminar were two people who pieved an important role in rublicizio n. Sidney Coleman di Harvand and Leonard Sussiand of Stanford both decided quite quickly that inflation was an important new idea | was a postmuch longer if it were just me taking. But ing their hends about it made the word spread queckly Soon I made a tour of the name word, including the MT offer. been a position for nine years at a total of loar different places, which was not a record among the people I know but was Qenti: As a certicle physicist, how did you

Guth Acadentally After Loot my Ph.D. I spent the next seven years working on

turned out to be my later entries into cost-

say And in theory, monocoles are more north or south I never believed in themfat enough, but too ugly

Guth: Not the most attractive periode theones naturally give rise to them whather we want them of not in 1978, while I was by Bob Dicks of Princeton He mentoned a dificulty of the standard theory "the fishness problem." That is at one second, say after the Bio Barro, you had places it the universe at that point had been estanding ust a bit faster, it would over forming And fif were expanding unverse would have very purckly collighted back on riselt Ormy The Big Crunch

Guth: The Big Crunch would have hapin cosmology, but this did strike me as a bizarra fact i tucked it every in the tukck into cosmolocy was that monopole crassunited theorees implied that macrielic would wild monopoles, but they'd be ndiculously measure—as large as becobecause you'd never be able to nandune them in accelerators But he sed. "Why scened like a strange question to me nously as a science. Henry persuaded me to work on this problem, and soon we then far too many of these monopoles.

Own: So either particle physics was WITCOD DI

Guth: Our ideas of the universe were wrong So we tried to foure out what ophie with cosmology. Acconting to GUTs monopoles would be produced dunno a phead transition that look place

Orma: By phase transition you mean something like the changing of water into

matter from one form to another es you chinge temperature GUTs may the undergone a phase change of sorts a small fraction of a second after the Big showed that the phase transition would produce too many monopoles. So the

We finally saw that the phase transition could really happen another way Before. we had assumed that as soon as the temperature fell, the phase change would poour racidly producing this tremendous respire of monopoles. But others For example, if you copilivater very slowly to below its freezing point, you gap per minus twenty degrees cervicitade

So Henry and I started exploring the

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 With an those wideo
 cameras out there, it's only a matter of time before someone
 comes up with proof of UFOs •

ANTI-MATTER

Today's UPO buths can now have their cansolites and vew them too, thanks to Starvideo News Rees, a California, cleaninghouse for flying stacer footboo

BlackWeb got off meground inthe melfectes, when founder David Aaron fortheven, gamed access to an oil tige machine te now ternenbesing to nostaligic sity, as rabout four or two imas the sate of presert VCRs."

Business boomed when he look out ads in Venety and Hollywood Reporter, promsing to tape wouldbe stars for wewing by ceating directors



UFO UPDATE

ume video recordar hen opend the todopter, seys Alaco, nos subro of the altancially syndicate count "As-Maco Dave" Armohal "correspondant" soon began enright of the second second second second second generation of the second second second second patterns Contraction and Subclass "began rifting through our feet for UPO readed material".

The search larted up out, permit is an inder recording at 166 try togotim featuring test well attricted to the second well who care claim belonged to a suprover UED permov depth is to policy states in an aggressive ditranse of their layes depute LEP partel disclosion moder increases and the second states and the second states and the second states and the second states and and the second states and the second s

in terms of bone fide evidence. Aeron feels some of his

When Nahos depends from the pretranged script, engineers prompty shull of the audo portion of the pregram, adding to early charges of government censorshop and poetrup. "This set up one of these days," says Aaron Somewhere, to once on these days, " and the set of the set of

More importantly. Altion declares now that millions of people have video cameras, it's only a matter of time before sometione comes up with incontrovertible pool of the altern origin of UFOs. "The evidence is out there," ho vows, "just wanters to be fitted."

If he time out to be right the lootings should reach him first Ason's over she kindbaar globuse a presently served by as meny as 160 contributos hailing from 43 countries and status. For a fait of available incorolings in either VHS or Beta forms, event \$2 and a sumped self-addressed envelope. In LHO, AutohVition Cenerghouse, Bio 340, Yunnan C.0 (2006) APPL___PEMIDS STGCT

been object the second as pervolutive classified to the Art Porce a video of the notations "boomesarg-shaped UPO" widely separat weeks bestier. County, and clips of the second second branch Colf forease do have for the pervolution of the and second forease.

Ascen is writing to consider that some precouse moments and instantial for a single prerestant for the thematerial record. "I would give anything for a modeling of the show where they cut Kohoe of " Ason segmentsing to a 1938 QBS disbets between Mispr Daniels 2. Fation director of NICAP (Investigating).



When Greg Simith movies from Paries Wildow, Faranis, to Los Angeles a couple of years ago he want Hollywood crazy "I wanted to see overything connected with move stars, only I want so insteaded in where they lived I wanted to see where they ded? He reades

So Smith want to local consistence and loathed where 200 stars were build Than he researched old newspapers and death centricaces for the details at clear stock how the utilitation and "Ingured a lot of people would live to see where uptim Behart1 (above) filed of a diug oversbee or where An Linideter's daught er took too much LSD and stepped out a window." he usings "So I sorted Gave Line Tours for people who where this mothed ouncest?"

rounces by Smith-Inde in a silver hearter for two and e half hours, exploring the clearth-styles of the rich and famous. Points of interest induce the spactness, where the induce the spactness, where the induce the spaceness, where the induce the spaceness, where the induce the spaceness, where the induce the spaceness. Mae West clied (1) guinsis Bod said "Come up and see ine sometims." Smith savs), his building where Jana Joplin overdosed, and the see where Recide Phrize committed suicide

"The house where Sharon Twe was mundered a seal popular with people," Smith says. "For some sock reasonim personally partial to the spot when Claorge Roovas, television Supperners, they to bears out."

--Sherry Belo

The other periods is the ading on a first both, and there is no way to deficit it, in the provide the deficit it, in a provide the deficit is the neuroperiod of recompliance of the recompliance of recom

The processing services and the attention of the service of the attention of the service of the Among other strings. JAPP Among other strings. JAPP Among other strings. JAPP Among other strings. JAPP Among other strings and services attention of the attention of the attention of the strings and attention of the strings. The attention of the strings and the attention of the strings attention of UVP which claims to represent the principal votims of the allegad cover-upthe military man who died-ways, "The very least the government can do in tell us apparet whom we are forhood and who".

Theologic the document has made a splate in the LFO community, its individual advisors have managed to remain undereated. According to theny centerwood, head of bitarre Against UFO Secrecy. We can't motioned the document and an weak don't how the source. If this people why wrote this have arren anale information, will better teo some evidence prefy spont "--arrent Data".

"A letter is one of the few sungs left entrely romantic, for to be entrely romantic, thing must be interecable."



AUTIMATTER



Is the internet of the magnetic field sourced and the soft network of 2517 the soft network of 2517 the soft network of 2517 the University of Subtracy for University of Subtracy for University of Subtracy Note University of Subtracy networks of the soft soft wedges to prove a stronge during thems when here and periods of Inform periods of Inform and periods and them of Subtrace and period of Informed Califord such permonent invertis the such permonent invertis the

Enclowinged by finding the Anapped ethics in historical studies of beingearty and diskrowence, herminger and diskrowence, herminger and one ghots studied to tooly one ghots studied who participated in 40 ceres ceres of being models ceres of being participated botter when a veriey of peomispherism was surrounded by creats

Although the reason lot this effect is unknown, Primarger pussion an georetry the pussion and period the result of the primary more reception to information which is the source hereaption and Alton Such as a source and a source of hereaption and Alton and work and a source in the laboratory accession of pair autocation, which have been the barrow of period autocation, which have been the barrow of period autocation, which have been the barrow of period autocation.

STREAMED FOR DRAMETER

Loss of newspapers and megazines nur oversion and/ answer health columns welthin by physiciana. But Body-Minitoffyin, a megazine bits covers New App topos, features a chieser f and of health columnst. Athough he holds no medical deglee, hermes claim to have thousands of years of esperance in the healtho



arts A currently disembodied spint he supposedly answins questions sont to the "Heath Connect or" column by channeling his advice through writer Tom Massa's of Sm Water: Changes

Maken step to unsecond indication to indicate a 1972 when the indicate a second second to the indicate page empty has a second second page empty has a second second page empty and a second second page empty and a second second page empty and a second second page and second second second second second second second page and second second

According to Massie, Himms is now a "spirit consocutiness" who somemesi comes hough to biouse hough poblems the desense and you books to dealesse and you books to deale or northwave, practical things they can do haive they hough to also part with high the also table is of about how emotions allocit people specifications

In a recent oburn, for sample a recent oburn, for comparing of dearness that had persoard for two years themes advered the afficient person to "rebations your body energias" with a sense of deep besidting exercises of deep besidting exercises of deep besidting exercises that are suggested in oreased creating. "When you are not using your creative states, not only will dearness body, the some exercise."



All De Astronetters 1

Perchanted Stephen Use, is containment of the Neikinsking containment of the Neikinclaims subcommittee for the Societisc Investigation of the Societisc Investigation of the Societisc Investigation (and engineering and the Societisc subcontrol and and the Societisc subcontrol and and the Societisc subcontrol and the Socie

ANTI MATTER



A DOUBLE PROPERTY OF

Psunte Bitew (acces) of Dealwar, Styaind has weaked at Instal 513,000 which of hourseling spinances in the pact few years Stern is not a wander in or is the promit to acts of violance, the is simply plaquid with a bothmic conduct her is access be body to emit electricity and late of it. So far she hers sured 28 some 18 bestmin 10 washing machines 6 sideposestet recorders and sideposestet recorders and sideposestet recorders.

According to physicial Microsel Shall of Onlind University, an expect on the pherometron of body electricty Shaw's electric charge can reach 80,000 wolds (A hypical high-powered microways ovian has approximately 700 volts (The cause of the condition an unusual the case allangy to certain foods

I hink we can escribe the electropy to an electromal metabolism of e whole range of code the breakdown of lood products affects the electromagnetic helds found in the body." Enklis says "It any environmental state is poked up in addition, strong electron helds can build up on the elde.

Share should hnow in exclore to wreaking appliances, she was suggended from him (bit a chyclesming) and publicate whether a constant) were wreather and bened. The new cools only with gate and here to star legitiances are write leaned on a computer tamking at her bank ahe menaged to knock out the entities system.

to ob pomething I do al

"The strutche life of the dring/Goes up in formes their are invisible/Life cellophiate burning in the surright."

"The measure of a men's real character is what he would do if he know he would never be found out "

-Thomas diabrigton Macaular

"There's the cabeletic theory that the excess of the mind fows from the head in the form of her."

- Longy Marry

STREET, STREET, STREET, STREET, ST

For two months in early 1967, south central Weconsin appeared to take been chosen as the site for a convention of UEOs

It all begins on varianty 15, when police of blocks from the small lown of Belleville reported a cubies of blacking lights in the say. At associal the same time, shared is and challing the same time, shared assimption on the sales configuration of multicolored lights estached to a cugarshaped object that an trut moved slowly and here at

Batween eight thrify HM and two fifty HM on Jenustry (Resettin and sobjecting, Briere wate numerous reports from soveral towns around Betavote, says investigator Donald Schmitt, a codirector of the Canter for UFO Buckes "Then at approximately three-revert, police in four separate cars that vere period at a lockout point observed the lights moving to the southwest."

According to Schwitt a dia confirmation of an unknown object Fying in the area was made by Indenia awaten officials in Aurona. Bross, subsequent checks within a five-county hadus haned up no confect explanetion to the confect.

Autoprover Main Boyaki at the University of Waccosmio campus in nearby Maddani however, says the ophongo can be explained Broxek, a consultant for the Conventies to the Boernatic Investigation of Campa of the Personnal used a comparties to generate the work how a conserver to the investigation and possible of the investigation of the investigation and possible of the investigation and possible of the investigation of the inves

"After cline(4, study of our data," his says, "we believe that, particularly for the Believile sightings, what the people saw was the bright star Betrigeuse stang very close to the horizon."

Machael Bure, a reporter with a certral Watchard of the newspace, conducind an independent investigation. And he adaptives investigation March & adaptives with Calvards accurate with Calvards accurate herein the adaptive and the second response of the people to by most of the people to by most of the people to both of the second water I-there is when to be classified as logarities (1976) — People Boling

SHOOFLY

a time? he ordered his body He drow in a shaking breach and couldn't seem to get enough an inches lungs

Possnar operad his kylls. The th year on the dela again, more the data with the difficult operation of the data with the approximative many data with the plane. Approximative many data with the data approximative data and the data with the approximative data and the data with the main material. Kalva players with monae material. Kalva players with modata with work of back the hospital.

He haid the prospectus tighty the time he would not be particular. The massed he processed be there contrary to here proceed to the tacks where the wengers such as mad fact off household at it. The ty social model household see where i'm dough Phalamen with see where i'm dough Phalamen with these to her dough Phalamen with the off the bootent of the phalament of the booten of the bootent of the phalament the set of the set o

Prosperier severing down as quarkly as the could, well before the standard for Twoliasi is should be it the standard "Procemen aned. "You meanstate tacking liftle bestated" this should be prefer to could se I was on the windowall again. Plassman lunged, smishing the prospectus downward missing. The ly ravept over to the desk again, descended, landing, Presenter hartaal the prospectus htting the gase. I stelded across the desk tag spotting mit, then toppled of the edge "Gad detroit of Presenter again."

He has to stap, bend over loads hands on the deal top, braining intrad Ho here is all postding. Let be inhapping it was all postding. If all is inhapping it was all over between Howards (postder) the para all sale sale gig at the source more condrawn between Howards (postder). The para all sale sale gig at the source more conduction of the the brain has all here conditions and the brain has all here conditions and the present the loaded the overs mean time the condition of the overs mean time the condition of the overs on time.

Pressment swellowed, Throat's so dry, he throught, appropriate seves the standard to reach to the gasses of mill. It's gane you adot, he madead himself. Lying on the toor Should he pick it up and dry the carpoting? Pick it. Lat Devien

"On off' the mannaed there were apalates of mit across the Berke conrupt tool the public of the Berke control the public of the Shadherd spots appear on the page workhed spots upbed them hard. When they refocised the wire they refocised the wire they refocuesd the wire they refotackeepinet Sucking up mit spots with the dynamic publics, he intogrift.



He tooked intentity at the fly. He had to sill in, that was certain Destroy it uterly. He problems would be solved if-

Pressman wriced. His problems solved (the could led the \$v? That year instrue

Still it had a kind of datk charm Wouldn't it be great if all his poblems were analogicated in hell poblety little shit devouring creep of an insect. that taweet-off, polarig, hary, sile-winged, poddame creaty-meting------

Whop, he total himself. This is a fly Roy Not the Counter Networks A lity A diffy. Tab by Period Prestrain dath in most Ha webtried the fly Event Inspirited with Dry Sough Shown Inspirited with Transervent What also Ros anywys? Per wonderod. Why the hold to they exist a PC and Gord Denni Hear south of the plaque se? Make us sick? What was their good denni nation of the?

Pression draw in a covering broth and ebudanod He tet a triging underneath his skin as though low-wittinge outerst were being traininitial through his teach Octi sension. Antiopation was it? Excitement attem prospect of deatroying Mr (Hy).

Not with the prospectus, though He should have been under the track in disapproval. Not sufficient to be shall be the second of the second second that the book as a condition of the second second that the second second

This packed the new paper of the role of and happent forwards his sections. World and happent forward Local New? The section of the section of the section back, Spectra Hole perfect. This sport of the section of the section with the section of the section with perfect to the section of the end then at the handle heb hethed if A galaxity wishows to any back the section with galaxitores of the backs of held the section with galaxitores back section of the section with galaxitores to any backs of the section with galaxitores data section of the section with the data section of the section with section data section of the data section of the section with data section of the data section at the data section of the data section of data section

"Okay, Mr. Fly. Prepare to dw," he mymed He sold himsal that it was cool amasement in his vote, not wrengelai haned. Told himself the shaking of his hands was natural, he organg tingle of liss team, a normal sign of keen infidipe ton, the transforg of his breadt, no more than might be expected.

The by was on the handkenthell again Perfect Prevaman thought He cannot reset the mak-soulated landing ship on Barley Field. His musty death was right

Presenant's pade dimensified to an sching, minutapped adverse his gaze based, toosky and unblinking, on the fly the previouslinking interfly menrator in his brain interned, uneverse of the approaching stakair so what on surking med jude ap its small their—

Pressman stopped to contain his services Out it can he told himself. The is

scrous lucking business. He nocided in agreement Pigril, he thought. Advance Prepara for deprivation.

He moved up slowly on the desk, whoad Surely the fly must see him now with one of those eight thousand godderm lenses. Presumen clenched his soft and hold his breath adging closer fore th news from the Park of cert

Presementanged, sterming down the tolded pages on the handkerohief Gotziar No eign of excepting light, the Vite shit was history Preserven song. "Depdore, the fiv is dead?"

He sthered, flipping over the newspaper sector. Oh, now well a second "/dxl not ass-hm-fy-sway," he said fissuch atting bein.

His overs moved quickly, an expression of increasions a contait on his face. This fly was standing on the latt near conter of the deak, unharmed, unfloatened Jasue Onvit Amplity. Presente thought He even to Ged he definitions in-

"Wat a second, well a second, lefts not---" His appared voice broke off He tessed the folded resentation

The fly shid up and veerad away Amazingk Presiment leading lear was able to track to its analogies on the drage. Josus Christ, it looked brigger now. Presiment acceled at the impression Against the begin dispa, it was an ophical Justion, nothing more He darted ancient the clack gazinteetered on the fly.

Ho gravitad in startisti startisti samo sha right od starped on the Sam grave. E instead aroo, ouwargi him to fait sware for the heat startistic startistic startistic startistic desi startistic desi startistic startistic desi startisti desi startistic desi startisti desi star

It sook some meutes for the throbbing ache to fode. Pressmen tell tears dat bling down his cheaks, laroud out form underneeth the lids by pain. Dear God, he kept timking owe and over

Finally, he opened his eyes. The first thing he sowwas the fly still on the stepse Presenant fail a walking surge of haland deep mide himself. You bestard, you, he thought. You busy, mether fucking som of a both bestard?

He started to push up stroot setung down ha sgift hand on the false glass. Sam' ha mund exploided Starthing up the glass, he hurked it to his left, wricing at the streak of pain made his elow. He head the glass break statistingly agent the wall. Good'ha thought Lat that bech pork ou he geores?

He was belanced on his knews now.



Or you world your here a y of sea from a st, food or a room a box

ONE SMALL ROOM, deep in Tennessec's hills, holds the secret of Jack Daniel's smoothness.

Accually, if runh were known, there's nothing "secret" about it. 's just that our founder insisted on smoothing his whiskey through huge vast of charcoal before aging. And for over 120 years, we're subhornly stuck to this method no matter what. Admittedly, charcoal mellowing is why you pay a bit more for Jack Daniel's. But, we bleive, a sin ywill prove its worth.

SMOOTH SIPPIN' TENNESSEE WHISKEY

Inverses Weaks + 43.515 which is place (0.16 peak) + Define or Fother is lack lower limiting line effective frequency Ends 1 perform (the 510 limit-con 37.52



evening shafty gaza locked on the fly to lack observation where the whole his high bocat is board of the whope his high bocat was a had each his hunler top phr? Babad, Presonanningheed 'Statustion damant He obtaint care He reached down to gash the folded newspaper. Chint, did he breek 47 half-mad smile peried bock hung With my lock, you

He aboot up slowly Never mind he told himself. It clicht matter, Broken elbow, tractured skull, oblitarated spine, it wouldn't matter. With he final, dying breath, held fall that fucking little basilated

He edged ap toward the window task, and backward back darks window task, the total page alows dewing softward made in my unit. The fy costs out, then made in my unit. The fy costs out, then hyper an end in softward the biddow pages an end has enred in the softward opper all crypto hirt in the air socred up, landing on the drope above his head beyond his math.

"Di, no!" Pressman's features contorted with reage. Clutching upward at the drage, he yarriest down hand. The root brace snapped off from the well, the drage came threathing down "Ged damy you!" Pressman whited.

"God damm you!" Presentin without his look dearanged The fa were leading on the dawn agein. Good God a did/bod tagger "No" his period the tengod it is regard to the sented the tengod it is regard to the sented the tengod the regard to the tengod the dawn of the dawn with tandbal in paceto the dawn of the dawn with tandbal in paceto the dawn of the dawn with tandbal in paceto the dawn of the dawn with tandbal in paceto the dawn of the dawn with tandbal in paceto the dawn of the dawn with the dawn of the dawn of the dawn of the dawn with the dawn of the dawn of the dawn of the dawn with the dawn of the dawn of the dawn of the dawn of the dawn with the dawn of the dawn with the dawn of th

The By had variable it Preserves mapped and the binah of this buzzegi tight But he broating who this buzzegi tight But he broating who book to built have been been as the subset in built have built built built built new Acid will no positif he toubles new Acid will no positif he toubles new Acid will no positif he have built and to basched for if he ped no attetors for extraord, new Acid here to the factor of the subset in the factor of the advance of the subset in the subtion of the short book of the subtion for extraord, here august being and the subset of the factor of the position of the short of the subble and man advance of the sub-

The insught broke off, he Rashed a deshtshead grin The fly was on the sola, black against the bags upholatory. There God the decorator talked me out of der brown, he thought advancing.

He closed is on the sola, publied as de the obliestable with his right log. Goly sources, he thought. He list has heartbed gating faster Good. Get that damned admonship haad get fiscen to his lips. You so town

bastard you are going to die. To die!

He fung himself at the sofa, using his entre body as a weepon, snapping the provider switter as he fel. The fly swopt upward to his left he heard # bounce off the shade of the end table tamp, drop clowrward to the table. He langed at it his shredding swatter branthe table Pressman statled, elated fly was in the air again, setting quickly on the lampshade Pressman didn't hes tate Lurching up he ewing the paper shade The lamp went crashing to the newspaper pages at the fy. They opened up and liapped to the carpeting like a in rabid tury. Where the hell was if Where?! "God damn you " He could barely speak. He let a dash of spiffe on

 It soared up, landing on the drape beyond Pressman's reach.
 His features contorted with rage. Clutching upward at the drape, he yanked hard.
 The rod brace snapped.

his chin and slapped it off, eyes wild as he continued searching.

He save a movement in the material targe above the bar with a more in it is again that is a more in the save and the save and the same save and the save the save and the save

"God clarm it, five got to have some-

Year He vetually dived at the sola, landing on twith his left lines, existing up splew Good Morehiting anal Ho shaved up backward to his feet, almost Josing belence as he turned lawled the back He staggered briefly, than regioned himself and tasked in on the bac type unrescho subte estimate of the profile.

by Now you bastand now. He writed it the solding nosis this indian't branch made Easy, he ordered Don't let it get away now the two firse coelesced with a movement so abruch the couldn't follow it. The IV was on the mirror 'Now' he munified 'Here I carre'

Presaman cripped the pillow corner haid, fingers digging in like talons. He swung at the manor, hit r. The liv took off He swung again, knocking a bottle of scotch against a stand of glasses, smeeters them "Nov-I" He couldn't for sh, swinging at the fir again, trying to knock # cut of the ar Archer botte crashed more glasses The fly was on the mirror once again Pressman swuho the odow tercely in a backhand smash came out so swifty from its surface that t glanced off Proseman's check. He howled in sickened fury swinging the prilow back and forth benankly in the archite tace a mask of hatred and overlaute Bastard! Stand and light?" he should

The save Tao Sy. The lifts bastant was back on the desk (Reading Tao), no new?. Prosenan mutaterst, needing Darwari be paralles if the soleh of sammer the the priback over at the fyr the bastant at the desk regimer to a same the prioritized and the regimer of the same the lights, the desk, insciding all the paraticity of the same prioritized and the lights, the them all same the lights, the them all same the lights of the prioritized and lights of the lights of the light of the lights of the light of the light

Presenting allocal immediate participa, a block of stammed detailed on the factor. The block of stammed detailed on the factor. The block of stammed detailed on the factor block and the stammed detailed on the per dispute values. Child in the black on the per dispute values. Child in the black of the per dispute values. Child in the black of the per dispute values. Child in the black of the per dispute values. Child in the black of the per dispute values. Child in the black of the per dispute values. Child in the black of the the black of the black of the black of the stammed black of the black of the black of the stammed black of the black of the black of the stammed black of the black of the black of the stammed black of the black of the black of the stammed black of the black of the black of the stammed black of the black of the black of the stammed black of the black of the black of the stammed black of the black of the black of the stammed black of the black of the black of the stammed black of the black of the black of the stammed black of the black of the black of the stammed black of the black of the black of the stammed black of the black of the black of the stammed black of the black of the black of the stammed black of the black of the black of the stammed black of the black of the black of the stammed black of the black of the black of the stammed black of the black of the black of the black of the stammed black of the black of the black of the black of the stammed black of the black of the black of the black of the stammed black of the black of the black of the black of the stammed black of the black of the black of the black of the stammed black of the stammed black of the black of the black of the black of the stammed black of the stammed black of the bl

() a rrm

Presenants laugh was ingitering to hm—a choixing, demented sound. Onforwarkers? He lowered the hand and looked around his office Sum, detenseloss. As the Antichnyt, Lord of the Flex Weant that a releasere for the Dev/?

"Brut up: Presenter municied to hmsel "Shut up" He closed his system its fields mean. His stortach was rolling hoty, burgeoing with social His brain was preseng outward at his skull, threataning to crack it open. Every muscle in his neck and shoulders achied with puisresicaen. Im cooria to de Not the fu-Me

He binked at the buzzing naise looked down it waint the fy but the telephone Exhaustedly he hauled the two parts upward, using the weet set the crade on the empty dask, then the receiver down on top of it. The buzzing stopped He leaned back in the chair, Salitaring as the fly came assuing down and landed on the back of his right hand.

On Jasse, Pressman thought He couldn't nove His heart was pounding Doublet the tyrkes is in the vehic of his hand? He stand increducusly all it After all this, on his hand adale? His Jand?

He watched the IV in frozen, breathlass stence, it wasch bigger, it was relie the enror. This takes in a stapp, incomertary dataset, which we what, it not gift There a was in third in the maximum of the the start will be the start of the starting on the hand, but Charles state? Did is know? Did is understand that one of them mixed dat? Was in othering teel in start? The for the survey of the starting?

But how? It was blocking he right hand, washing as legit. The protonal on clearly washing as legit. The protonal on clearly washing on the genit body of his conguest? Preservan's lace distended at the thought. Doch lose at his commanded trimoet. This is your lesit sharice. Lose it and washing form.

We, he focupt thest senting Sawar, he slid his left hand across his lab, pace lased on his ly harmash move his light hand, not a trender swerth. Let hen have the right hend if his palation, his pacet Lat han preach his sensor on the fahres and the lowes—in his case. The mile oper worths acids his left hand was here. Power and the Gacy Inchangly he raised has laik arm to the level of the chara arm, then slipped its hand access the adje, answing it down to the left hand pooler of his suit cost. There God he clarift have the time to hang it in the class! when he came is the information

Present and the product of the product gala commonly on the hy the trapes or pool the billed edge and near the sector solvey, item the product (paweld lower) adout a product paweld lowers borne Social Soci

Deer God, Hr it be, te presend i te mend the bilded blocky very slowly Was i walching him armsed? Westment tende poddemic one of these self thossend tenses. Excued on his pHM at a struck him at boyred ballet how http: ten has doneward movement west his time the valid dapped against his land.

Something surged up in him a cry, a larg, a tasteal joy He showed back the chair and toppled forward to his knews on the parpulage. The fly lay indicates



on is book tagen the well WHA alwayse and "however an enhand down, pre-traing the second second down, pre-trataged the second second down and the one of the second second second second second on the second text and second second

Then has beined returning awallowed reached up Islad his received and carned it to his had? Wey 'he said Wey that his voce? Good Goot, was that his voce? His wanted his lace and cleared his threat strengously, then turned lack history and the must find the

"That you Pressman?" asked the voice He shuddered "Yes"

"Masters Just new noticed, on my calandar, that I was going to stop there on my way to lunch. Too iste new meeting as an iorganithm it hought it would Have bould of a law char.

Pressuren notided "Net

No feep for # Masters told him

"Of course" His voice with back now rs emotily, polassional tone. Uston these things happen: No point in letting vite throug delute us?

"Right" sold Masters. "Call you in a day or two."

Preseman kept on nodding "Yes" ho seed "Of course"

He was speeking into a dead receiver, Mesters had alwaidy hung up. Pressmen not cod how his left hand trentiled as he as the receiver back in place.

He sai in service for more than half on hour. Fifteen manufes, into it, he indiced freespotion his left path and word it off with a base from his deak draver, hnew the taxes into the evolutional.

At one-surais Doren cerre took Peasaran tool to tell her not to cerre in when the incoded, but she opaned the door automatically. Tim back Me.— Peasaran tet a baking pein inside his sterratch as she indexe around the office in autonament

Ho drew in a breath "A fly" he staid

After she was gone, a coldress proped at Presaman as he understood her look

In the soven years they'd senied here frend never been a fly inside his office

"Oh, he mummed He let as though he d just been hollowed out A lly descanded in an aroing plummet, lending on the deek top several inches from the edge of Prostmans right hand CO







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to chearly it as one," she says. "The rat-Inste served on the fields is zero parts phosphale approximately two percent rimate, and zero parts notash

Ammonian mister bowiver is an ac many years been the most important ri-H. Curtis, chief of the agricultural anxiconnectal services section for the state

During the conveniage process, the waste is trapped with emmores and ber are which equitation the acathy and reduce the rackoactivity and liaco metal retarned by the sort, where, with the ord enough to promote forage production musky in addition to the converted tertil

"I would be unfortunate" says Eclerit health management division M. Kert-McCen to react the rollingte down a well

The refinite contains traces of radio hexanes and heavy metals including on Gee's NRC ligense requires that heavy metal levels as well as test how the measure more affect the soil vegetation, proundwater and surface water on or

that abenations in nature occur naturally

Cartile Assa Residents Association savo 'meleng the long term effects or the cla-White the Oblahorro Health Do pertment claims the 18 cases of carpow not an unusual amount for a count location Lammers saws, "it's too much dinesa

To make matters more complicated, the only information available about the conto convert it comes from Kerr McCon The data released by the company do not include an analysis of toxic ordenic com ocupts which are presently related to CMM

mutations, and party poersciellingia Adcan has "berely detectable" organic parts. most of which evaporate and chorado

Herschel Elliott an agricultural engimer at Porn Sale University who speteral says that because organic solvents least one detailed chancel analysis of atentified by the Environmental Protecton America (UPA) as causing mutations to molute an analysis of those com-

State efforts to regulate spraying have been held up in court. In 1988 the Okiahoma Weber Resources Board (OWR8) EPA to assess whether glourshwider is terno threadened, determined the rathcells was a "optentially twomful by ordit gram with new scarkatt spanckasts.

Ken McClee, which sold Security to Technologies in July (subject to NRC apeccording to Shill, the state "hed no buseness" establishing controls over materie

At the securimendation of a hearing cision on the sale of the company and the request for unrestricted use of the tertilopris still pending DO

Robopsych

who trapped through the nations deface lies for months before the Fiste tracked him to a ground floor apertment

"The Fock don't know while pano of." ruses five years ago They ket said. Kid, go away Caril happon here " As for corposete Amonca, Murphy huris, hey te fost in space" They loget that hey have PCs on their cleaks and there and no change-and all the trade seconds, of the and say owe-and if gives They don't Now with enough in ponethers. Mutothe

declares. "I'm going to be the IBM of secusty-I A M Secure Data Systems Get anywhere Everything Load -- to gettures toward his electronic allar and in brow-lis note here

Because of Marchy's brush with the and Adserne struck on a plan that would In 1986 they established LAM flacure Data Systems inc Since then, several corporations, smong them United Air lines, the accounting from Post Marwook Main, and General Foods have hered Murchy at \$800 per day to "trae-team means recessivy to uncover the sys-

Marphy's fem also helps detect hackcurrent Marcha to making and worth exteriory. ere in each case. Murphy tracked the rethings to East Count collecter Beth workerig put of college campus centers

To achieve his professional goal, Marantropy, his own deep seeted respect for a follow hacker who leaves no loof cents. Meet of all, he will have to battle the hacker's nature, the stornorype of hacker as control truck, emotionies automaton, electronic outlaw Capitalin Zsp. ers he wherees with a sudden singler ple who are in more control of this society than most people would dream" And ers, and nonpoets may read and be moved by another's poems, but in the mustified as to the value of the hacker's art they are intracident and holespad by a brassi so totally apert CO



chase transfort method in the GUTs. We transition happened with a large amount of supercooling. It is excess of motopoles would be avoided. While we work thinking about the monopole problem. Henry and I were blindly assuming that rate it would have without the phase tran silion. After writing down the equations to see weld been grossly incorrect. The phase transition had a very dramatic of of the matter would give rise to an incredverse to expand way beyond the rates

Feb expansion would exist And Limmodately saw that it would get around the Dicke "fatness problem." I became very excited, but I clide I have time that right to work out all the details. I dracated my cled off to SLAC. I was knowing track of my times on biking and I broke my personal record dashing to SLAC to whip culated Dickels work-how accurately the In the pourse of that I made it clear to mysell that I was notit about my hunch. The problem would said op meny if you Omy How can we check inflation?

Gath Nothing in participaty is easy to check But test of all infahoo explains. some leatures that we already know the at a gran rate today? Dickets question density of the universe. Cosmologists use tuely helt the expansion and turn it into a contraction. So the value of the ontcal 1900 Today were somewhere near this ontool mass density-of least within a

an unstable equilibrium equation. By

mass density at a point in time, it will to main exactly ocual lorever But it is unstamuch laster than the critical mass dan sty tabs. The ratio botween the two would expand too last! Smilerly 7 the miles.

It's analogous to a panel balancing on its point. The only way to stay powhed up-that is at onitcal mass density-is Ome: Which is offensive to some

Guts Bohr, bacause the time we're etright now, lan to tworky billion years alter the Big Bang, is an enormously long time created the unwerse. So the discrepancy of time scale is the problem. What hapmotaphonical period to be balanced so precisely that it will shill be natirly vartical ten to have a belien years later?

Gensi. The relationary blows thereitydensities were equal after the reflation and

Guilt: With a reasonable inflation of the



to be equal to the ortifical mass density to an extraordinary accuracy—like one part in tan to the lifterth power

Unfortunately this balance of censtes is that a hard president to lear. Measuring the mass draway of the universe is particularly difficult because most of the mass is evalued. This data mather as its called is detected only through its genetistical interno on other wittele terms of matter such as tass. And at least made matter such as tass. And at least made in the universe is this data matter of universe.

Orest So inflationary theory yelds the heltom Can God be accused of producnative in inventing possible universesstance that somehow this very nice ittle loward an extramely hundrum later time Guthe The kind of universe precision by inflation is minimum wive paradosical. On the scale of the visible universe, it is dulke than other concernable models--- ds enthe evolution is about as simple as you could imagine On the other hand, because of the enormous expansion, the mof a much looper metra coverse, of which the weakle universal is merely a tity speck. cenating subject for speculation. The dult On the cosmological length scale of a few hundred million light-years or more, the vedte unverse seens anazyoby unform The strongest evidence for this comes from observing the costrec tasck ground tackation bathing the conth. Its of no methor in what direction you look.

In task, white it hadso is the hard to unit operand how the increading uniterrity of temperature over these transmitter (advances carries to the strandroft containages) and the temperature of the temperature of the increases that advances are the universe statute out at a completely uniterrity many stratics whethere it the universe statute out at a completely uniterrity many stratics and the angle temperature of the increase and the increases that and become a place, while the operation reference becomes place, while the operation reference becomes place, while the operation reference becomes place the strate of the provided becomes place.

Overs: So how big was this very early prediation universe?

Guth Amsengly small About tax to the minus twenty-four continuous across, smaller than a proton And also amsetting, it would have only about twenty-five pounds of metter.

Occur Where did all the rest of this stuff

Guilt' Theirs a marvelous Isature of gen-

etal lebinity which some people had indeed balanci the invention of inflation, But initiano people a specificular way general initiative in any cosmological isoma some terminal instruction and and the metal instruction and and the metal instruction and and the metal instruction and any one prime the corres given the gravitational wai by which everything is attracting everything else

Oraw, And the contribution of the gravtational toric is negative because it binds matter together

Gurte in many cosmological models, this registre energy of the gastellowal field precessel cancels the positive energy that the univerte aspends by an enormous amount Recause this deniry bar volume energies constant during the inflationary operation, the volume increases further loady. The total mass has to increase enormously-possible scenario also

In a phase change, the bubble would grow at a speed rapidy approaching that of light, which means no one would see it coming until the bubble wait hit?

hundred orders of registrates But https: the positive energy of the matter is barry canceled by the gravitational energy high becomes provide the positive of the always at all times, very reach-and barry at all times, very reach-and Dann's physicial test posted this and Dann's physicial test posted this and Dann's physicial test posted this and Dann's physicial test posted the and test and the and physicial test physicial dis of instant and your physicial were clower to board part for w

Guite Locket know that story, harts great! Well, because inflation allows the unwese to pop up starting from practically nothing. Loten say that the universe might better utilized loss lunch.

Great Let's go back to the beingness question Since the universe was process being, with matter distributed events, how can there be interesting objects in today like you, the trass. or MT?

Guth That had us worred to a while After is invention, inflator exempt to produce a correlated uniform structuraless un-

verse with a perifically strongh mass densequi-locally inconsistent with what we observe. Stephen Hawking linit auggested the with stands this by perinting out that is not locally a classical work we emind by quarking strongs, so every thing is a pobabilistic process. Avai when missis damany matchines to influton, you ripsi quarking strongs and missis damany missis functiones could simplify in the strong beginning dama process damany missis functions and the strong strong strong strong strongs in the strong strong strong strongs in the strong strong strong strong strongs in the strong strong strongs in the strong str

A rumber of us who worked on heavrings supported when all a meeting at Carathogge Livearity in the sutmetro of the By the run of heav reading, other body opmod that, yes, qualitain Physics does give nes to domain functionation whose form we can noted calculate whose form we can noted calculate meetings in the subsportment in the give mare to increation that the weat such import han whele we can benche subsort of the heaved.

Omni: So you would have extremely dense calcelet?

Buff Vice, and because of the environce density these gainess would have callapsed to black holes very early in the theory of the universe. It would all be black holes that says density of the black holes. This says density of the black holes the says density of the black holes. This is and the says density deep inter to copy of the says density of the copy of the black holes and the same of the says density of the theorem of the says density of the theorem of the says density of the theorem of the same of the same of the theorem of the same of the same of the theorem of the same of the same of the theorem of the same of the same of the theorem of the same of the same of the theorem of the same of the same of the theorem of the same of the same of the theorem of the same of the same of the theorem of the same of the same of the same of the theorem of the same of the same of the same of the theorem of the same of the same of the same of the theorem of the same of the same of the same of the theorem of the same of the same of the same of the theorem of the same of the same of the same of the theorem of the same of the same of the same of the theorem of the same of the same of the same of the same of the theorem of the same of the same of the same of the same of the theorem of the same of the same of the same of the same of the theorem of the same of the same of the same of the same of the theorem of the same of the same of the same of the same of the theorem of the same of the the same of the the same of the the same of the same

A peer ware proceeds to be unnated, with listens of early to be instein power years. That is block of impository from power that is block of impository from powers in stread in the protects do not copy—so the "the early or protech Hatins" have been public beyeff into the hitty species' years. So the instead, window been powers both the tradew of the first powers been dispurved by the protect deary experiments (colculated by specimizing physics) in USER, and the Work Black Turnel Isbeen that and Revec Black. Turnel Isbeen that and Revec Black. Turnel Isbeen that and Revec Black.

Others: You might equally well have inferred its failure from its inability to precict galaxies, assuming infation was right. Darb, this if well have bait enough.

Other The claristy fluctuation problem was the most prominent facial in while was than called "new inflation" What was your role in revising the theory?

Guth When I hist encountered the inflation ideal Tassumed that the phase tranalon in the sety universe took pace very entitiety to the way watch coals. When water back, bubbles of alsome harm not off-theory includes the intervention field location and the set of the set off-theory includes the set of the set

About Christmastime 1981 Leoceved a peper from Andrá Lindé, a Russian

an operationy, desonbing a theory inflationary universe " He supbo the eners whi verse was born thurshed firough ha ceper Limmedielely saw that ha possible form of cle physics that ored Lindes approach worked could in effect be saration formation tubble was com pfeterary model

lenger than we can observe—in which new universes are being created at all times, and the process goes on loniver And to buillocal people of the universe will be a senantae life

Great Lappose if overy improbable that our local universe will run into another universe—another bubble mixeds the even-inflafing metauniverse outside

Gath That's light Because of the contenuous encomous expansion. The afreening schwell of this exponential goodstime were gating farther and farther were from officer bubbles all the time Betacks everything getting farther away from everything getting farther away for everything farther away for everything getting farther away for everything farther away for everything getting farther away for everything farther away for everything getting farther away for everything getting farther away for everything getting farther away for everything farther away for everything getting farther away for everything farther away for everything getting farther away for everything farther away for everything getting farther away for everything getting farther away for everything farther infation going is incredibly small—only the energy equivalent of about bivantylive pounds of metter can produce in principle on inflatonary universe

So do the laws of physics haaly permit creating an influornary uneverse by intermide goodssel Final of all the workfylves pounds of maker has to be concentrated in a ingue of alexal tentermisming you include contractions to to the soverhylfth thread had of water hing for beyond the means of any toesestie technology.

Ones: So do you there has we will be able to make a loy universe? Guitt: 1 don't sog



proposed by two physicists from the Unvosity of Permisylvania' Paul Stanhardt and Andreas Albrecht

Deel According to new inflation, every bobble in this grant exponentially explanding universe becomes a microunivariae Curs is one of them. Conversely our universe has around it a meliusiverse that contains late of other bubbles whose inhabitims them to ever contemplate?

Goldr I wouldn't verry accul if in those terms. Whot's lasonating as that even though we are committed to the Big Borg description of the vesitive universite inflution gives us a lotely different picture of the universe as a whole it as the picture of a metauriverse existing on scales much moly, which the given any two capacities geners. There has to be come distance, which the large or shall knower them. The given the increasible distantion of generties advect by personal relativity. tubties would charp to be completively and became to take and any of the poses of the imitauriverse. So it could through be a case of "hou can't get there have them.

Onvy: They'd be causally deconnected, that is in time as well as space?

Buth Yes, it looks like that can happen Grow How about mixing a little pocket splice-time made our universe a backets universe?

Guth It's a difficult, infiguring question. The initial mass-energy it takes to start Versindows increating tablity outside the bounds of the Euclidean geometry we all inturvely understand it covers space make half and movies out into the newly toeled space which disription with our space outside in fact, the new universe on galities of and bootness study isolisted from the space on which it began Overs 30 the intuitation's of it between it.

Buth Tight In its early phases it's still about the to the minus twenty four cardimeters across, much smaller than a probin. Under a microscope, it would bolt, from the outside like a bry black hole. Open: So what like would it br?

Guth Wel I was spasking of the most minimal way of producing autiverse. You

any precised way of doing it in this bareaseable future but left loss that and/or any any any any that at some point in the increability deant future some could create these every directions. Do the leave of physics in procephysics, in procephysics, in procephysics, in procetion of any any loss of the leave of the allow the cotact on the processor. That is all an usawer outleaster.

I can tell you sove parts of the anneer first, you might ak if a unit of worse were colead by starting mitation in a amail region of space right near as, where would that new universe go? Would in explosite and do uney with a universe were living in right row? It a an effe operted the reveaues erro.



No. these are not

acut do i trigger, ray, bankettal-tech-But wetder 11 boekettal-to ise-timprotenson, we have only aboution to the must thing loss resconds or to be budy this new universe betten it completely disposant punches tell of the our universe and lisecones disponnected them au space-tim frem frem in with high spaced instrumentation you mg/m be able to of the oversimple.

Guts Were providing some loods for the there is como to be an entre universe. I think it's far to call it free Some people would use the word chasp Basides new universe expanding. If you pack the much energy together and let it do its friro, d'i sat colares to a black hole without farming a new universe. If we look at any of these models describing villal them beckward in time, we use that they they I verworked on with Eddle Farts have at MT is whather it's possible to add other ingrodients to avoid the nated for this mto enquially If we want things to explants in deprete the schallon. then thanks no way to avoid the singularity Orses lio we see that there's an unavoid

Guth Using classical physics

Densities there is quertum meterosecus meterosecus and only to bold called " Guide Meterosecus" and the metal of the metal metal metal and the second second second registrating and with a guide to discusscased metal metal metal with an event second metal metal metal metal metal metal discussion in the metal guide metal m

Onesi Toolay wata satitat nis tha may ma wearun public underlying sately, makene that the equations of panete physics are not going to charge subcary on a that do well well at the same dark makes always the possibility that the date we live in coald to anyte well messatulis states. These might be another well be the symmetries of many to a satisf the cause a classic of sature to a satisf the sature that is fault barrieto nousid cause a classic charge in our weivers

Certainly the is a hypothetical long shot Probably the vacuum write living in is stable. But even if the not, if a probably so long releant that the ultimate lise water listing stores is non partier the survey would be not it industrif main young must be sufficient a phase change are robre would prove to speed that would input (investing). Change in the bubble would grow at a speed that would input (investing). Change is the speed to be an all indicated and so in a comparison would include the bubble well was comno with it has the bubble well was comno with the

Offere: Does hat mean for example, that the particles that have organized them solves into your body would change into a row kind of particle? Would the intomation the retained, or would you just be rendered back with the primarial see of a filterin isols of particle?

Guth instantianceusly, all the particles in type (but) would be given in instant liven the work of this fubble company beam of the second society from the type second be deviced and particles, some might network very some second beam of the second type of all but all the particles evold of the society and the second beam of the type of the second beam of the second b

Centric II isseems highly unlikely, however, that since the last change was on the scale of a minute fraction of a second in would wat roughly twelve billion years to make the next sump.

Guth Yesh thet's exactly the point

Other The boar previous share make the possible section is the resider branching environment of isolatering particles or the optimic constants: capatel to be wery, very detomety chosen in our supverse Stapf make interesting the forma veryoastable make interesting the forma veryoastable of the processor of the chosen as smeltimes of white Does such a created tiggere of descriments a despace?

Griff My, earn reaching or the save of interpretact ability once in the occupants of prefers that ability once is the save of the end of the same of the save of the save of the end of the save of the save of the save of the end of the save of the save of the decide the crace that he as an eleval decide the crace that he as an eleval decide the crace that he as an eleval the end of the save of the decide the crace that he as an eleval the save of the save of the and the save of the the save of the

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BROTHER INTERNATIONAL CORPORATION, INSCATAWAY, NJ 2005

96



or coupen dehorency at birth. Twenty ives by 'mechanical means-using say guns or knives or by jumping from twotts-had expensional mechanical terth trauma didn't have to be life threat-

pected bombshall As Jacobson comorigid his statistics ine postulated that tels et particulartimes later bocame drug addicts. Dolying further into their birth druce that passed from the mothers. made those intants more susceptible to drug addiction in later Ma.

In Stockholm, where we have a seritors of addicts were born around 1945 rapie "he size "I be eve that the use of abuse in the last low decodes and I proclict that the tate of drug abunn may

havor during addinggeners? Jacobion ro A specie-specie, and ked of ment and identification early in life imprinting is known to be a critical mecha-

immember which appened during their better Jacobson save Traimate ex penersoes at both are imparted sometimes leading to a compulsive urge to reperson this regist mean a drive to go through life with a brain numbed by citutes and ways of birth for product an cking the first day of life when an umbil ygen Only a small percentage of babies who experience traumatic births, however, eventually harm themselves the adds 100 C6/N

David B. Chamberlain, a San Diego of a traumatic or chugged bath may be carried within the body on some kind of Even though a baby a brain is not fully developed at birth, he says, the intern mind is alert, exploring and bury assim-

by Jacobson's results. The mind pave most likely to be remembered. he says

page who survey her mohers' nefectwo abortion attempts register such likethreathring events, and these cleach ropressed "memories" may gyentually but

Traumatic expenences suffered at birth appear to be imprinted to our unconscious . and might be responsible for a compulsive wae to recent the trauma dunna adolescence 9

agest Androw Feithman who shaded tour at the same time each year for several yoars. When he nervorwed four mothmethan atlanuts) Three rectors in

Sak advances a different theory it a newborn comes close to death and is then rewied he submits it could wasken near death experiences, with bright lights may react to the normal stress of adologhand. /Wasst commit suscide

Practicitiesaned Barbara Findeaen of beth traumas set up psychological pet-

terns that determine how individuals deal you're stuck and exhausted" she says tve. They we imperited that they shouldn't he have Without help, they desposewhere psychologically or physically by

Findosen claims alte has helped hundenote of people redress the effects of birth yaumas by using guided imagery randumationces of their briths. When her conscious level, she says, they are able to contrart the experience and change

Other psychotherapists remain dubious about establishing a direct relaself clustructive behavior. Julian Gomez, a peachatry prolossor at Employ Univertherapy hypothetical. He points out that similar theory relating bath experiance to denounced by his peers. "Hepressing records to deal with beth traumas makes as much sense as astrology " he says

Although Gernez admits that Salk and behavios he believes they faiture to take account is a significant faw in their research. "They have shown strong comeevaluating obstetric procedures to prevent clamage in the future." he says

cal establishment integrates the kind of information Jacobson is coming up with." she says. Beeidee, while there is a move toward return childreth there is even steine control and intervention. Thirking people in later He is very tai from the

some children's brith experiences push them toward self destruction statutos many of his colleagues. Furthermore, he has been unable to get his controversial studies published in an American scienmitted iss stuckes clid not evaluate his

understand that the subject is alarming, he says, it suggests that everything modified But t doesn't help to ignore the way what happens during birth may pave the way for inagedy milater He DO



.



you stop being an agruable." Ticl give my right arm to be ambioverous." "Thate Goal Im an afteret." Tive told you a million times not to executarial."

GRAND PRIZE Olen S Leach Durcen. Oldahoms: Did you know that the word guilbéle does not appear in Webster's New Collegeate Dicknostry?

RUNNERS-LP John Pavakos, Indian Hart of Brach, Florida ("Intrying ny best no to do my best because I would refree win an Onve subscription.

John Jaffer Sassots Floride "Ste's been cated another Eudon Wildy," is new John Dickin," is taken like Joyce Casol Cates" Like them, Joy Wilams is in a class by henal? (from the actual of for a new book by Joy Wilams)

N Pike Johnson Phoans: "This is a bad week to be superstitious" (from a forture ocidie)

Any Balinger, Wilowbrook, Illinois, If 'V' statements never contained "then' classes

Denvis Thomas Hempstead, Texas, Complete this sentence Complete

HDNORABLE MENTION Cardy Gurdan Piqua, Ohio By accident. Hoamed the meaning of the word avernationly three days before I link heard it used

William Nochum, Fannington, New York, If creativity circln's exist, we would have to report if

Mart Lockie Frieno, California Woovergenn, a hanapolition of initial sounds after Behop Spillern Wooner, who often made such errors.

Jan-Austin Foucher, Anahorm California: She called me a dullant, but I carill figure cut why

Mark Skeem no address: May I subint my entry in the lore of a guestor?

Michael H. Wooster Mountain View Celiforner. Its too early to take a well-linduage attitude

Summer L. Shapeto, Encirio, California Lauffer from unrequited nerceasian

Katha Milar Naples Florida Showing remarkable maturity, my fourteen year dd daughter said. "I'm not mature enough to go steady"

Mary Emit, Del Max, California: No renoina nuos (from a sign in a library)

David W. Striet, Deriver, Ottes Compation #100-For the best data for Orios Competition #101

Jim Bentey, Williamstown, Massachuletts. This entry is not interesting enough to win the context. It is basely interesting enough to cet an honorable mention.

Andrew Hensel, Waterloo, Onteno (unneal new verbiate): 24 namber of readors sont in ontrop like This was the wimer in the verbal (obligacy) which is almost as self-reformable as an ontry can get An even more self-referential entry came from Andrew Hensel III the University of Waterloo, Ontano Can you figure out what his entry weit? CO

FICTION

YOUTHFUL FOLLY

end of Case, Segred the partial time, and were recyclic trans, where it causes that the increased is a linearized to part with their is caused as a time, and were that mere the part with their is caused as a time, and many their is the set of the set of the set of the set of the their is the set of the set of the set of the set of the were who be that a constrained state, as the were set were who be that a constrained state, as the set of the were the set of the were a constrained state, and the work of the were the constrained state, as the set of the work of the the set of the set of the set of the set of the work of the were the set of the set of the set of the work of the were the set of the set of the set of the work of the set of the were the set of t

The fasters in which Martin was to most Kasy Berlin per oristod sprea firstly feel below the desert face the work on the evologe spread for the desert face. These spectral set of the American set and the cost of the the set of the set of the American set of the set of the set of the the cost of the set of the set of the set of the set of the the cost of the set of the se Despite the spacety of gaps.— These molecular and the spaceton in the later based on the later to a software of the later to a software of the state to a so

"This is not our other othershi" said Mared, blocking his path 4 third sectors and a sector objection than before

Over the the gust waid Mash firmly. He had never head a gun but he hoped his show of morel experionsy would share Mused insistence action ha was supposed therefore, when Mural banded the machine action over

The safety is off, he taid Martin, "Sniply point it and pull the trigger. "His tips twitched upward.

Mattern logs had grown heavy and he could lead drops of swatt proving down his chest. Nonatheless, not warring to

MARTIN HEAD A WOMAN'S SCREAM. IT WAS SO UNE XPECTED. OF ECHOIS THROUGH THE FISSURE, THAT HE FAILED TO RECOGNIZE IT AT FIRST AND ASSUMED IT TO BE THE CRY OF AN ANIMAL. In Accordination, the variant put designs, along the laws in the designs, along the laws in the designs, along the laws in the second second second second second second pairs along the laws the left area. The laws second second second second second second second second along the second second second along the second second second along the second second second second second along the second second second second second along the second s

group The provide the Anothem and Married Index and Laboration of bottless should be a set of the set of the

"Did Hey hurt you?" asked Martin broathiess

No.1 she said. White her take to him

He find appointed her to be distributive to the expension time periodic years and in each time time technologies, much as the technical approximation of the technologies of the technical technical approximation of the technologies of the technical of the features of the technologies of the technical and technical technical for approximation of the technical and technical and the approximation of the technical period technical and technical technical for approximation of the partners of the technical and the approximation of the technical technical and technical and the approximation of the technical form technical and technical technical technical display and technical form technical and technical technical technical display and technical field technical and technical technical technical display and technical field technical and technical techn "I don't know how i'll repay you," the said as Murad helped har to stand. "I was a foci to cono here store". Su stand i that searce low element with another taon in Mar-

Suddanly that service loce aligned with anathur lace in Marter's memory. "Itsum Kate Berlin" ha said. "The plot."

"No longer thanpiot, she seek with a smile. "But year I'm Katuburist: Navi year to 17"

Ref cost Mexim larcefully as if the wars untherlation. But I have all about you about Graytin. He bedde off embedrated by He enhancement and also concerned that he might have offended her by bringing up the subject of her old lover but have concerned in all behave.

Ah? she said . You mud be an ahoonado of the storms

Marter was depleased at being categorised but he couldn't deriv at "1 subpose you must minw proces like me."

Not as many as i sead to and certainly none who have to ved my let. She kepted two head to one such stands at two weghing assessments. That me other you my hospitality the overning. We then a parked above and I have a house in Caro. If shew you the scribt

The deal of spanding time with someone when he had conissigned impossibly remote flustered Martin. These to change my plothic, he sed. And yeah And I.

"You can wash at my house, said Kate: As to clashing we can pick up something for you in the bacaw. If you don't mind playing the part of an biggitten for one right." She brushed his writt with net longerides. "Power

The seclustiveness of the ministran so dazated Martin Institute paid no attention to the nod will which she signaled Musici

As they have over the case of two colored during the bedetered in the horizon taken mayness state. When its blockpown here occurs the improve the answers of the the initiated control in occurs the improve the answers of the the initiated control when the latent with the heat of during the weight of the during the initiated of the initiated control the stated control and then well the heat of during the weight of the second of quarks density in the initiated control weight of quarks density in the initiated of the state proved as A using a state of during the the grant of the second of quarks density in the initiated of the state of the proved as A using a state of the state of the state of the second of quarks density in the state of the state of

TETY (SOF LYOU MOVE? 150 ABVEC

Decar planned to loave that to do cucked into the territy base ness. I wanted to be a plot. He wished he could have briten basis the statement...I had the time of childfah wath leves.

She planced at him. You're a liffe old to atart tsuring but you might be able to do it. How any your reflexes?

Not ball live done some de flying " Agen he head the duit snask of he navele Compeny on flying to ploting. God He nothed to over it. "It rever leave the said in a self-deprecation to some "the Saven set in related to the stability."

You weren't of oil should back at the fassure wheread

A noncentry locue. Dut of the correct of the web first which he local muscle gridped benative when is site barried the later he local indicate local wave werth wince all of the power of dotates and myters about the policy. The short they way? he when 'Their priors letter on the characteristics of the stormer's the generative was built the out whose characteristics of the stormer's county to believe the wave built of whose some refer. The county believe the wave built of wave. The short is the new of wave more thread if the section at deer, there are new new of wavement of web? The source is done in the section of the section of wavement of the section at deer, the section at the section of wavement of the section at deer.

Its anomability quarks in the said she kut her ways boot on the down likeway ways kneeth that. Cardyon would have anoward in the Merkelool to built a harden storm and here the Ware you quarks to built of the said the said storm anoward of power becomes the intermediate the ordenity word quarks and of the said the said the ordenity word quarks and the said the said the ordenity word quarks and the said the said the ordenity word quarks and the said the said the ordenity word quarks and the said the said

her pewary he stad, "Nover mand

You needed be owniciations. Grayin is three years in my In walled with hir through the streets of the Rhan al Khala

They've implant...d new syste, done skin gov/te. Restared most too much for herr. He was unstable in any case, and the aborn

Marin was shocked Mermers were highly addresse and

was now is waste populated by the term of relagens --mostly

multiple storm cells. How had been produced by the warming

At insul this was Mattin's perception of the name, which to his pool and a deam to so while papeors stalled among them

Twoget had come. The sky had despared to swender and



cleved why. Why here? Was it careful do alone? He secariled the haps that wis it, perhaps the tack that he had actually been

rive order a mole devel a decorder welling sons Ord -

When Kale mude her appearance, Martin was dumblounded

As they strolled she took his arm, and that slight weight alled



congregated to welch acrobate and pupplert- the bacate with one passed bettering offering bargane then becoming salors Other correc children tugged at Martinis solo and many sourced also the buildings, and once Marth saw a comulter him a single winding river of a stread, a twatting dram Typugh time as well as space, for here Mo was as a had been for centuries. He did not spot only talkale of the current mileut a semblance of right during broad daylight

They below darkness allows perfect understanding' sed

Inside, if was prizh-black, but Markh could hear whetpers and single question but to al

The voice was so solt that Martin could not tell # a man or a going on? he shapped. What is this place? Again someone

Here there is only acceptance, said the crocky voice 'We

Lidori turukentarist, said Martin, The same division the skew

to gas in the dark one-must burn like the priors in there shots

Decide what newwed to him the alseurcity of the place. These words struck a chord in Martin: he enterthered the intensity he had led back at the terrary 'Are you all plate there' he added

who come twee to coucle. A termak body pretorial briefly agar st tem leaving intentio alteration of beaaries and belly. Then vocees

- "A taw ato wonithy and onders the place"

Had that been Katies voice? Marks could not be sure He serviced the prosence of others around him, has should ar muncles tightened the back of his neck pickled, and he found there touches of lear oddly pleasesable. "Why abointh right alone?" he

Some have indeed chosen the path of stephole darkness

- The anthropic the calignous

"It is whepered you are from Antarchon" The crisiky vocat agen "Disgusting! All that giars from the roal"

Martin had been sincers in his questions, and they reliquid to his own eyes, perhaps for the first time. With actorectment he recognized his polantial for violence. He wanted to break something its streaming, and he coulled in the tening it was Thought of being able to express anger seemed a kind of identy Sco? come a whoper "Already the darkness longles you

The commence had no effect on Martin, his anger gave of #a

Tri sorry the east as they passed through the door "I debut

The street of a clearbod terr, "I just my territer The west

I they was understand multiment in was face when you rushed pay me in the feauro' She pertured at the mostale

Teappose the admitted But anger ent a verse

"Yours has the verse of being strong" She feed him with a

They are at a restructed whose walls consulted of Oriontal ruge deeped over a skeleton of bearboo poies and after the brain hookal to their table he filed the tool with most tot and blues of the ruge appeared to Martin to be swelling around He

His throat was dry it was hard to talk, but he managed is nod

Though flattered Martin southed at the notion. This potung

"On theme a meanthance Of pourse while much different ence " Katu loyed with the basis moundleece of the hookah

in after (wouldn's relations in kind) I merely previousiant and we resided to kan ignout to a storm to deny its sweetness and On each occasion the upharvel was more biller and the reph-

faithal built auro you ve heard

has aftern 1 know they were more acts, and I was sure that he lowed my Dut chang his last aftar he grew cold and remote asked at of him. How could I have known held shad a often than

EACH FACT HE RELATED POINTED UP THE OF HIS LIFE IN COMPARISON TO THAT OF THIS WOMAN WHO HAD FLOWN INTO THE MEADTS F STORMS, WHOSE AFFAIR WITH GRAYLIN WAS LEGENDARY.

She inheled from the hooksh egain. The powi had gone out and Martin made to relight it, but she caucht his hand. "I ve had smouth "she said and signaled the water, who sould, dow-

She arched an evolution. I service think you'll approxiate the

She was hiding something, but it didn't realter. "Will the plause

Her answer was barely auditio. Yes

All richt The said the buildheid nervounly receiling the uple stores herd heard about memories. Mayba I'm screathing Ma

Her eyes widened at that and har artitle-unlike of her pro-

Maanlight washed through the windows of Katjo's bodycom casefully folded her robe head down soleren as if concentral

HE WAS LYING ON HIS BACK. SURROUNDED BY A WHIRLING CHAOS OF OCHER SAND, AND SAND PARTICLES STUNG HIM WITH THE BITING FURY OF FISH OOKS PINHOLING HIS SUIT AND THEN PITTING HIS FACEPLATE.

and race and opened the down of the right toke. He heard

said. Alternand we'll blot it out with a different port of marriery

These was a moment of blankness after which suchts and plads The pain was bad, and he was anable to move, barels aged beyond repair his could only to thank and watch the torgiow that fickered as if its power source were on the blink. A around made it and yolice tighting about back and forth along. He felt has fowed hands clawing at the coolness of her eves. Felt comuch ... a exem of feeling ... their to enaid no kingsin

a hand on his creat and whapered. Martin' he opened has

shounders Wes?

I thought you wore different from the others," her eves were

She turned her head to the wall, but he forced her to face hers

he said. This is just your little lank, ngh? I dich I alive your Ma

She inughed "Real! You shought you saved my life cikin't music And you enjoyed it

He felt a strong of arousal numumbering the contusion of

"Oh yes," she whepenud. "You loved it! You should have such This is what you've always worked. Blay with me. I'll lows you

He hither thes. A black ourrent of onger flowed into his a

to seal if up to bury if becease the forms of an ordinary if a High plexitys himself to the samared the daleters the concretely de-

He straighted her empty glass down on the counter. The man-

He click I realize the screa was addressing him until someone topped him on the shoulder. A belition standing behind him

Market stalled up from the stool, pushed the belitow stade past, people powied at him and whispared A chattry men area of the recepton desk. Laughing. Mortin amed a kick at Alabic Burk stemming shut the sensation of motion. Martin

Tranking about Antentisca cleaned his head somewhat. He out her hand, his face pleading. Martin tell nothing for him it



for a reach/son for take to punch her like what it she'd seturned

driver lutted and and something chantul in Arabec which while mountains to that should white even while deaths while

Sharrie and rade and doses were refind together in his heart. much else. He understood her needs, and he needed to satisfy them i'm back had say in a gain whisper a voice of signe eyes and a brand-new attracte. No more stammening no more awe Held pulliher close, grind her against him feel every rich stand chain at him through lightning. Those eyes that warred to the for low. Ny turn had say DO

HAIR-RAISING

sample of decaynbanucleic acit, or DNA, which contains each inclive/up/s unique genetic ocide. Within the past few years scientics have learned that the genetic blazprint gleaned from hair can be converted with a pattern potentially lie valunicie as a financial?

sole is a high processing of the go to executhis one of certifications disk will local concoding that he had fattered a child he orbatines body lay in a harmed and protions. Calinark, Diaglostics. I disk man tawn. Manyland, company, werk to the parter with maintactions to fails the disk the over owners that might softle the curetor of partery. Let negative her and that tools.

Cell-trark-timelectair biologid at an operan is takened the long denote takened of DRA, more heaving contentiation of DRA, more heaving contentiation on DRA and the long of the long track press. The profile service is the long press. The profile service is the long and the long of the long takened and profile service and the long and the long of the long and the long of the long and the long and the long and the long and profile service and the long long and profile service and profile service and profile service and the long and the long and the long and the long the long and the long cadure, signing forms designed to assure courts that no one has tempered with that or the DNA down from it

The backgiets began the analysis by socking Watson's systematic analysis in solutions that separated out the DNA. It wound up as a bundle of strands—the DNA from a single out can measure roughly a yard in langth—stuck to the sole rol a tost the like in rescent of list.

Each of Website long DNA startists contained about 5 billion bis of informstions an a detect pottern. Live an inscistope of a speech, the pattern consisted el setandois segments of meaningful internation interrupted by silkel, apputtrie units and also of the genetic code As in every copy of the speech tage, the internations came all the came sites in power copy of the DNA.

Utilities of the information, the research ensinest actions biological consists collect restriction enzymes in the DNA different the anzymes cut the strands at every genetic any and an Tho rescut west is proble of DNA fingments of varying lengths.

The most critical kills in the investigation tion entabled sorting cut the fragments according to their inregities. This scring out Waterins wystorius DNA took place in a claar, polykies of-set about the skin and thickness of inn issue of Ormi lying closed on a table. A biologui intected the chopped-up DNA into a hole the size of a langernal at one end of the horizontal gel. Beccure the lab has colorad ha DNA blue to make it eases to see the injection looked like a bizzarre nitual—is writecoated prest revenently employing a furnam pain into a tub of clear 28-10 Write a writeos webled elently.

Then the backgrill lamined on a 75-voir current II backen forwing through the get through the DMA, which cames a singlet negative charges assisted migrating in a dataget line charges plass at the other and. The amaker typics of DMA stands moved tobler than the hosties strands. After UI hours, the lightest strands, have UI hours, 20 camentaria, through the get. Howele strands before among lagoest before.

In the optimized several subsequent shaps, tab workers added radioscher probes designed in hok up with carban werkerven sequencian in werysteris DNA chain. Some of hose essuremente were now located in amate eignneite, mar his positive paide. Chains with in the heater straints on the other end of the get A large prioto paide calles in automati them proided up the calabilities patient left by the rareflormer protest.

The brained translucant autorati resampled a blue X-ray plate But melesid of bones or cepans, it displayed a set of what locked like supermarket bar codes.



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Tabletop Telescops from isco Actually a high-quality 200% ad broouters As a result, you get of all you'l love our LOW price Onter

- . Pully Coaled Optics for flest Climity
- Its to 455 visnitie Zoon Focusing

- Dependence Place and Plant Pocusing Polatos 300 Degrees Partnerd Level Foldable 216" Metal Tripol
- Machanian

Liteting Linded Mir/s Warrent oll-Free: 1

One was the pattern emerging as the DNA from Watsonis has wormed through

The other codes on the same autorad bar codes were ined up next to Wal socis Moleculer taologist Arry Contri

between the child and Watson-Iwo bands hed up with each other There on the suboriid, Contry reported that she operved 17 bands shared by Wetson related people would have that many banda in common, she palculated, whe t peape report on the scoring, she wrote

of the analysis The FIN plane to open its Rosewoh and Training Center, an FBI

specia als and non a district organized moment record," according to Bernard Greezer, manager of the research arm of the National Ingitute of Justice "United use," he says. "The window closes, but

ecolysis give scienteds etrong new locatsga for solving a wide venicity of practicel design victors whose bodies are in-Ish usage peterns by geographical area He has no results yet. Ofwar Byder, a gefrom animals like conflets, for maximple he says 'But they sleep a raids and us whether mountain conline are closely minted to lowland conline and might possibly reliable whole reliabed to whom Locks of hair could even be used to iden try materia children Secel success



Sharpen your penci and put your brain in high gear



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JBBARD HOUSE, DEPT. 5-143 615 E Danie Deach Divid Danie, Florida 32024 ately it was traudulent. "Washington wore a white way over disk heir," he notes. "The sample actually cerne from a white dog."

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A fractal favry tale. The snowfiske that became a cube, plus tips to KO Mike Tyson

GAMES

By Scot Morris

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AT&T mathematical sciincea director Ronald Graham was also surpresed % cube isn I the first thing you'd think of The salvs





But with the benefit of included it seems obvious?

In fact Gardner wys reny methomatican (consulted with one exoppion, was amazed hell the tetrahodra analog becoms a custer. The exception was Mandebica who claumed he alteredy interval doubt he alteredy interval doubt he alteredy interval cust he since failer use assistanting and had within all out on page 1396 hes 1986 book 766 - hassal Bootsmity of Makine The passage a so oblicate however that no one notend the connection and as the sound takes a model for any counting to the "soundwise" cause might be a model for the human lang according to Mendeltout. The extend of the lang is period y smooth. Its asigs "found means know that model there is an includie mean of tubes."

The computer graphic mages at left croated tor Omn by Gosper, if us hate the transformation of the lettebedron into a cuba. The serves bagens with the simple tatrahodion (bottom lett) by the tourth image the cubic shapps is appovent, and the surface closper serve, "tooks like it's boor slapped with a wetter rom coverod by a cut of means."

Unlike the providable carwin permisels which is bumpy the surface of the oute is smooth. The contains a complex should be of seconthin partitions have a conceptual theires of zero 1.

For an analogy, conside a block of slood chasso The sloce are pressed together, and thi space between them is of The andere is upsharead

But what about all those mechanizes papore that, meteral down into the block of choses and bahween exch alors? "Nou could argue that thay are also part or the surface lines part or the surface lines part or the surface lines down into auxilian heave allower lines are the block of choses or choice at those of choses or surface lines into it may of the chose or wall anonexest in when

Gooper concedes that in mightee simply indiscouand the innovflexe cube regions and the innovflexe full "Mandetbrot was so determined characterizing the mismaic discount of the coportunity to particular the mensi funcais metal suppose. To him it was obvicious that it (the three-climensional phalog)
VIDEO SCANS

GAMES

Video gene players are goldeg new meaning to the term associate qualitational instatut of setting in floot of the TV which a con of bleer in one hand and the namble context in the call of the grade a control pad and do the put ing, swriging kolong or punching themsolves. And the envy physcal danger is a synchrom known as video genre frager (bis symption: a punching toy namb floot gent).

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If you teten to Mike Tyeon, tooring neally anth a bloodand sweet boot! He clemes & Ten percent physical and rendy percent mential and encloses" meening pethage, that the heart and sould the sport survees transplantation to a viceo gene screen.

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LAST WORD

By R Edward McNeil

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