

Researchers find human's earliest ancestor yet

by James E. Rickman

An international team of researchers has announced the discovery of fossil bones and teeth belonging to the earliest human ancestors yet discovered — a hominid who lived in what is now Ethiopia between 5.2 and 5.8 million years ago. Hominid refers to the family of primates that includes all species on the “human” side of the evolutionary tree after the split from chimpanzees.

Two reports on the extraordinary discovery recently appeared in the journal *Nature*.

Researchers found the fossil remains of several of the ancient individuals along the foothills of the western margin of the southern Afar Rift, located in Ethiopia's Middle Awash study area. The Middle Awash is located about 140 miles northeast of Addis Ababa, Ethiopia's capital city. The area also is located about 50 miles south of Hadar, where the 3.2-million-year-old “Lucy” fossils were discovered nearly 30 years ago.

Yohannes Haile-Selassie, a doctoral candidate at the University of California at Berkeley, and Giday WoldeGabriel, a geologist in Hydrology, Geochemistry and Geology (EES-6), are lead authors of the *Nature* articles associated with the discovery.

The team discovered the first fossils in 1997, with the latest one found this year. The fossil bones predate the oldest previously discovered human ancestor by more than a million years. The teeth and bone fragments



Above are hominid fossils belonging to *Ardipithecus ramidus kadabba*. The holotype mandible of the subspecies is at upper left, the Amba toebone is in the right upper row and the hand holds a fragment of collar bone. (c) 1999 Tim D. White/Brill Atlanta

apparently are from a hominid that emerged sometime after the split. The hominid is part of a newly named subspecies of early man called *Ardipithecus*.

While *Ardipithecus ramidus kadabba* is not the sought-after “Missing Link” — the yet-undiscovered creature that lived at the cusp of the evolutionary division between man and chimp — researcher Haile-Selassie said the hominid certainly is very close to the branching point.

Based on a toe bone discovered among other fossils, Haile-Selassie has determined that the new subspecies *Ardipithecus ramidus kadabba* almost certainly walked on two legs when on the ground. The creature's teeth share more characters with all later-discovered hominids than with the teeth of all fossil and modern apes. The relatively large back teeth and narrow front teeth indicate that *Ardipithecus ramidus kadabba* ate less fruit and more soft

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Director meets with students

by Michael Carlson

Safety and housing were a few things on Laboratory Director John Browne's mind at the all-student meeting held annually every summer.

"Students form an important part of Lab culture," said Browne. "They will shape the way the Lab will operate in the next 20 years."

Using student surveys conducted over the past few years, Browne said safety at the Lab was treated as a very serious matter and that students felt safe performing tasks they were assigned to do.

But Browne said the Lab is working to improve safety further by customizing safety training and providing specific examples of risks associated with work that is to be performed. He also wants to better inform students of the moral and business reasons for workplace safety training.

As a division director at the Los Alamos Neutron Science Center (LANSCE), Browne noticed a student with no safety glasses operating a drill with a cord that was too short to be safe. The student told Browne that he was hesitant to express his concerns about the drill.

"If you have a safety concern, never be afraid to tell your supervisor," he said. He said accidents on Lab property can result in missed school and lost work time. Housing is another problem for students.

Problems with housing include high cost, poor quality and limited availability, said Browne. The Lab had been working with a housing contractor for a couple of years to build students apartments, but it was



Laboratory Director John Browne recently met with students to discuss issues such as safety, housing and hiring. Photo by LeRoy N. Sanchez

determined that such a project would be "cost prohibitive."

"The apartments would have to make money or be subsidized by the federal government," said Browne. Unlike dormitories, the housing units would sit empty for for three-quarters of the year, said Browne. A large percentage of summer students arrive in the spring and depart in August and September.

"The Lab hasn't given up on this issue yet," he said.

Science Technology Base (STB) Program Office Director Allen Hartford wants to put students in dormitories at colleges within the Northern New Mexico area, such as Santa Fe. His proposal would include bussing students without transportation to and from the Lab.

"That is the best mechanism for dealing with housing in the short-term," said Hartford.

Lab officials are concerned that students refuse employment at the Lab because of poor housing conditions and availability. Some strategic hiring will come from students during the next 10 years when more than 800 regular full-time employees are expected to retire, said Browne.



LANL, the Laboratory bi-weekly publication for employees and retirees, is published by the Public Affairs Office in the Communications and External Relations (CER) Division. The staff is located at TA-3, Building 100, and can be reached by e-mail at newsbulletin@lanl.gov, by fax at 5-5552, by regular Lab mail at Mail Stop C177, or by calling the individual telephone numbers listed below.

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Questions about how to work safely and securely?

by Fran Talley

By now, employees should have received the "Employee Handbook: A Guide for Working Safely and Securely," published by the Environment, Safety and Health Division (ESH-DO).

The 22-page handbook covers a wide range of safety topics, from workplace safety expectations, work performed by subcontractors and radiological concerns to sunburn, venomous snakes and tick-borne diseases. It also provides important safeguards and security information on issues such as security infractions, controlled articles, marriage or cohabitation, random searches and computer security. A section on administrative policies and procedures and a directory of useful phone numbers is included.

"The Lab has about 95 formal requirements on safety and security that cover particularly hazardous or sensitive work," said Phil Thullen, Environment, Safety and Health deputy division director. "The purpose of the handbook is, in a few pages, to reiterate some basic Laboratory policies and procedures and to outline employee responsibilities. Our intent is to help build and preserve a workplace that is safe, healthful, secure and environmentally responsible," he said.

"I think this little book will become a classic," said Thullen. "By reading it, all Lab employees, contractors, students and visitors will be able to understand the basic hazards and expectations associated with working for Los Alamos National Laboratory on- or off site," he added.

For more information about the handbook or to coordinate additional needs, contact Aleene Jenkins at 7-4218 or write to arj@lanl.gov by e-mail.



Is your organization's technology a target?

To know what technologies are targeted by foreign intelligence organizations, the National Counterintelligence Center compiled a list of the most frequently reported targets and submitted it to Congress in 2000. The most popular technologies are high-frequency and very high-frequency military radio systems, according to the NCC. Information systems in general top the list and also include encryption devices, satellite communications and signal processing.

Along with information systems, the list includes the categories of sensors and lasers, electronics and aeronautics systems. The order of NCC's targeted technologies runs from the most frequently reported targets to the least frequently targeted.

The sensors and lasers category includes underwater acoustics, infrared detectors, airborne and ground radar, imagery dissemination software, digital terrain data, infrared imagery, optical night-vision products, photonics, thermal-imaging camera systems, anti-submarine warfare and electro-optical sensors, and passive communications intercept and electronic intercept receivers.

Under the heading of electronics, the NCC includes airborne switching and logic devices, control units for missile launchers, flight control systems for military drones and high-voltage systems for night-vision goggles, tank sights and riflescopes. Also on the electronics list are hybrid electronic circuit amplifiers used in radar jamming, hardening of equipment, integrated circuits, transducers, semi-conductors and VHF/UHF satellite communications repeaters.

Aeronautics systems round out the target list and include F-110/F-120 state-of-the-art engines, the F-22 advanced tactical fighter, the Chinook helicopter, aerial gunner target systems, the F/A-18 Hornet, the C-130J cargo aircraft, aircraft engine safety systems, gas turbine engines, brazing and welding technologies in aircraft manufacturing and technologies to increase aircraft engine efficiency.

For more information on frequently targeted technologies contact ISEC at 5-6090.

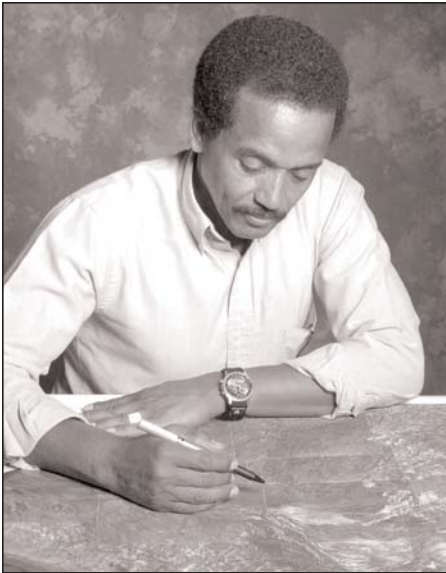
Otowi Building netting project now underway



Workers from Henderson Construction of Albuquerque have begun building scaffolding along the east entrance to the Otowi Building at Technical Area 3 as part of a project to clean the atrium areas and prevent birds from roosting. Once the scaffolding is up, plastic sheets will be hung covering the windows on all three sides of the atrium to shield the building. Crews will then remove bird debris and power wash the beams and

walls. The beams will be repainted. A nylon mesh netting will be installed, forming two planes when complete — one horizontal plane, just underneath the lowest beams, and one vertical plane covering the triangle of beams at the east end. Once the work on the east side of the building is complete, workers will shift to the west entrance. For more information, see the May 21 Daily Newsbulletin at <http://www.lanl.gov/newsbulletin> online. Photo courtesy of Diversified

Facilities (FWO-DF)



Giday WoldeGabriel is a geologist in Hydrology, Geochemistry and Geology (EES-6).

Researchers find ...

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leaves and fibrous food than his chimpanzee contemporaries, who were specialized frugivores.

Haile-Selassie believes *Ardipithecus ramidus kadabba* was about the size of a modern-day chimpanzee and about 20 percent larger than the "Lucy" specimen. Because neither the skull nor intact limb bones of *Ardipithecus ramidus kadabba* have been found, an artists' rendition of the creature is impossible at this time.

But *Ardipithecus ramidus kadabba* no doubt was a hardy little soul. WoldeGabriel and his colleagues characterized the creature's environment during its life in the Miocene era (5 to 6 million years ago) in Africa. At that time, *Ardipithecus ramidus kadabba* lived in a forested environment — a far cry from the region's present day environment of harsh desert surroundings. The area where the hominid dwelled was as much as 1,500 feet higher in elevation than today and it was much cooler and wetter.

But the hominid lived at a time when Africa was in the throes of continental change. The area was peppered with active volcanoes and intense earthquakes related to the formation of the rift valley. The Awash region during *Ardipithecus ramidus kadabba*'s day was showered with pulses of thick, hot volcanic ash from nearby volcanoes.

"It's hard to imagine that life would go on under such hostile environmental conditions," WoldeGabriel said. "*Ardipithecus* and the other animals inhabiting the region were real survivors."

The researchers found that numerous animals lived during the time of *Ardipithecus ramidus kadabba*. The research team found more than 1,900 fossil specimens comprising the remains of more than 60 identified mammal species. The fossils included primitive elephants, horses, rhinos, rats and monkeys. Researchers found the remains of more than 20 primitive elephants together at one site.

Finding the *Ardipithecus ramidus kadabba* specimens represented a tremendous challenge to the researchers. Lakes, forest areas, volcanic rocks and recent sediments cover about 87 percent of the present-day Middle Awash area. The remaining area contains patches of ancient sediments exposed by erosion, but less than 1 percent of the Middle Awash has windows of exposed ancient-sediment outcroppings that contain mammal fossils.

Discovering, correlating and searching these small windows to the past is a research challenge. The new *Ardipithecus* subspecies fossils were tiny nuggets in a huge landscape littered with pebbles and boulders. Finding the fossils truly was like finding the proverbial needle in a haystack.

To determine the age of the fossils and to understand the overall geology and ancient environment, geologists WoldeGabriel and Grant Heiken of Los Alamos' Institute of Geophysics and Planetary Physics (IGPP), Paul Renne of Berkeley Geochronology Center and UC Berkeley's Department of Earth and Planetary Science, Bill Hart of Miami University of Ohio, and Stanley Ambrose of University of Illinois at Urbana collected volcanic and sedimentary rocks that lay above, beneath and within the hominid-bearing sediments. The dates of the ash layers and lava flows bracket the age of the fossil remains.

To determine the age of the volcanic layers, researchers measure the amount of argon gas contained in volcanic rocks in them. The gas is a radioactive decay product of naturally occurring potassium that was in the rock when it cooled. Argon accumulates at a known rate in rocks and minerals. By measuring the amount of argon in the volcanic crystals, researchers are able to precisely determine the age of the rocks — and the fossils as well.

The international team includes more than 45 scientists from 12 different countries. Institutions represented by team members include: UC Berkeley; Los Alamos; Miami University of Ohio; University of Illinois at Urbana, the Cleveland Natural History Museum, and the National Museum of Ethiopia.



The Middle Awash project initiated site management of this locality in 1997 when the first specimen of Late Miocene hominid was found here by Yohannes Haile-Selassie. In this photograph he is standing in the foreground where the mandible was found, while geologists work on an exposed overlying volcanic ash on the hillside behind him. Beginning in the 1997 season, the project's paleontologists stripped the surface of the sediments of the overlying basalt boulders, facilitating erosion. This strategy has resulted in the discovery of many additional fossils, including hominid specimens. (c) 1998 David L. Brill/Brill Atlanta

'White Rock Y' parking area open again

by James E. Rickman

The "White Rock Y" parking area — which closed in March to allow researchers to construct a water-monitoring station — is open again.

The paved parking area, near the junction of N.M. 4 and N.M. 502, is near a flood mitigation device — called a low-head weir — that was constructed after the May 2000 Cerro Grande Fire.

Researchers with the Laboratory's Earth and Environmental Sciences (EES) Division; Environment, Safety and Health (ESH) Division; and the Environmental Restoration Project (E-ER) constructed three specialized boreholes that will allow them to monitor shallow bodies of groundwater that lie beneath the canyon bottom upstream of the weir. By sampling shallow groundwater in the area, the researchers will be able to assess whether the accumulation of water behind the weir enhances downward transport of contaminants from historical Laboratory operations.

"Monitoring the effects of runoff in the wake of the Cerro Grande Fire is an important issue for the Laboratory and for the public, so we know that



Photo by James E. Rickman

many people supported our efforts to construct this monitoring station," said William Stone of Hydrology, Geochemistry and Geology (EES-6) and technical leader of the White Rock Y borehole project. "We know that closing the parking area during the drilling process created some inconveniences for people, so I want to thank everyone for their patience and cooperation while the construction was going on."

Now that the monitoring station is complete, researchers will collect samples from it periodically. By analyzing the samples, the scientists will gain a better understanding of the relationship between surface runoff and intermediate-depth groundwater. Such data could be valuable to the Laboratory's ER Project, which engages in activities to clean up legacy contamination or stop it from potentially migrating.

The station is located inside a fenced area at the northeast end of the parking lot. Because scientists must routinely have access to the station, the area directly in front of the fenced area is designated as a no-parking zone. Stone urges parking lot users to keep the area in front of the fence free of vehicles.

Student discounts available at local businesses

by Michael Carlson

The Community Relations Office (CRO) is issuing discount cards to students working at the Laboratory.

As a collaborative effort between the Los Alamos County Chamber of Commerce and the Laboratory, about 20 businesses are offering various discounts on products and services. The discount program, which lasts through September, is intended to welcome students to the community, said Albert Jiron of CRO.

The discount card can be used to purchase books, clothes, food, video rentals as well as other goods and services available at participating Los Alamos businesses. Local businesses honoring the student discount cards have placed placards in store windows, Jiron added.

Students can get a free discount card at the Community Relations Office located next to Metzger's Hardware on Central Avenue. For more information, contact CRO at 5-4400.



Volunteer opportunities

Available on the Community Relations Office (CRO) Web site

http://www.lanl.gov/orgs/cr/cr_volunteerop.html



William Earl

William Earl has been appointed senior project leader for Chem/Bio Program Development in the Department of Defense Programs Office. Earl has been actively involved with the Department of Energy

Chemical and Biological Nonproliferation Program during his assignment at the Soldier Biological and Chemical Command, Aberdeen Proving Ground, Md. There he served as the senior team leader for the Analytical Chemistry Research and Technology Directorate. He has been active in this program since its inception. Earl wrote the "Tri-Lab" Los Alamos, Livermore and Sandia Proposal for Decontamination. At the start of the program he was the "Thrust Area Leader" for the decontamination activity. He also led the Lab's decontamination effort. Earl holds a bachelor's degree in chemistry from Beloit College and a doctorate in physical inorganic chemistry from the University of California, Berkeley.



Greg Buntain

Greg Buntain is the new Program Manager for Hydrodynamics Testing and Advanced Radiography in the Nuclear Weapons Experimental Programs Office (ALDNW-EP). Buntain, a chemist, came

to the Laboratory as a postdoc in 1987 and joined the staff of the Explosives Technology Group (former M-1) in 1989. He later served as project leader for warhead response determination in Weapon System Safety Assessments, high-explosives surveillance, for which he won a Distinguished Performance Award, and Enhanced Surveillance. Buntain's experience includes high-explosives, weapon surveillance and diagnostics, lifetime-prediction modeling, risk assessment, organic and metallic

engineering materials, thermonuclear materials, weapon safety and emergency incident response. He holds a doctorate in organic chemistry from New Mexico State University.



Kurt Steinhaus

Kurt Steinhaus, Education Programs Office (STB-EPO) director, was elected to the board of directors of the International Society for Technology in Education. Steinhaus will fill the Policy, Leadership

and Coordination position on the board. The organization's charge is to increase the impact of improved teaching and learning through the use of technology in schools and classrooms. Steinhaus came to the Laboratory in 1999 from the New Mexico Department of Education. He has a doctoral degree in educational leadership from University of New Mexico and a master's degree in

computer science from the University of Oregon.

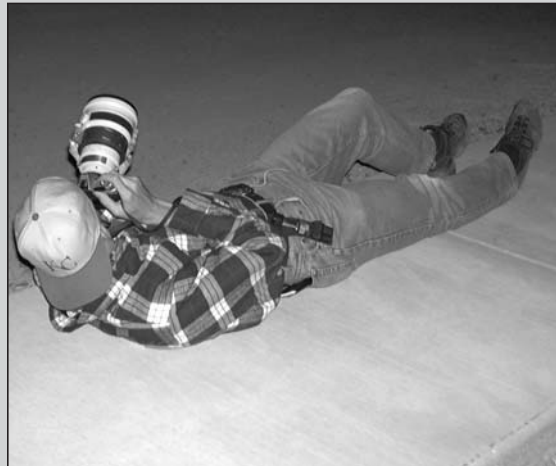
John Marburger is President George Bush's nominee to become the new director of the Office of Science and Technology Policy.



John Marburger

Marburger is currently the director of the Brookhaven National Laboratory and president of Brookhaven Science Associates. The nomination has drawn praise, including positive words from the previous OSTP director, Neal Lane. Marburger has a doctorate in applied physics from Stanford University and a bachelor's degree in physics from Princeton University. Before coming to Brookhaven he was president of the State University of New York at Stony Brook. Marburger also served as the chairman of Universities Research Association, which runs Fermi Lab, from 1988-1994.

Earthwatch students reach for the stars at Fenton Hill Observatory



Steven Skolasinski from Duluth, Minn., takes a picture of the International Space Station as it traverses the night sky, traveling at 17,000 mph, before it disappears over the horizon. Skolasinski, along with seven other high school students from across the country, came to Los Alamos recently to explore the world of transient phenomena in astrophysics at Fenton Hill Observatory as

part of the 2001 Earthwatch Student Challenge Awards Program. Using the various telescopes at Fenton Hill Observatory, the Earthwatch students' main assignment was to locate double stars — stars that are very close together — to determine if the stars can be detected as separate stars or if they appear contracted together. This is the fifth year the Lab has hosted the Earthwatch program. For more information on this year's program, go to <http://laastro.lanl.gov/earth> online. Photo by Shelley Thompson

July employee service anniversaries

30 Year

Jeffrey Bradley, P-21
George Guerin, LANSCE-2
Siegfried Hecker, MST-DO
Thomas McLaughlin, ESH-6
Richard Mischke, P-25
Gerald Pomeroy, S-3
Pedro Romero, CCN-4

25 Year

Daniel Archuleta, CCN-18
Randolph Carlson, DX-7
Raymond Depaula, MST-STC
Matthew Hykel, NIS-5
John Jennings, NIS-FMU-75
Cheryl Lucero, DX-1
James Munroe, NIS-8
Michael Osborn, DX-5
Sylvia Pana, IM-8
Kathleen Parker, IM-1
Gary Pfeufer, X-7
James Ray, E-ER
Daniel Rusthoi, AAA-TPO
Tommy Stup, CCN-7
Robert Trujillo, FWO-SEM
Robert Valdez, ESA-WMM
Jean Vigil, BUS-5
Rodney Whitaker, EES-8

20 Year

Kenneth Ault, ESH-1
Karen Burkett, HR-5
Joseph Bustos, FWO-SEM
Julio Castro, ESH-1
Steven Cole, ESA-TSE
Zora Dash, EES-6
Hararld Dogliani, NIS-IT
Robert Drake, D-4
Jose Duran, IM-5
Camilo Espinoza, P-25
Lydia Gallegos, DX-1
Debra Graves, SNS-DO
Norman Gray, P-23
Loretta Gurule, ESA-FM-ESH
Aaron Honey, DX-3
Paul Jackson, B-1
Kim Lam, ESA-EA
Richard LeSar, T-12
Dorothy Merrigan, CCN-5
Yolanda Martinez, EES-8
George Nickel, P-22
Jimmie Parson, B-2
Richard Pearson, FWO-IIM
Relf Price, NMT-4
Albert Rael, S-3
Ronny Snow, MST-7

15 Year

Jannice Aasen, NMT-16
Diane Baker, EES-11
North Carey, ESA-EA
Edward Derr, NMT-7
David Harradine, C-PCS
Jose Hernandez, ESH-5
Spencer Hill, ESH-14
Edward Jacobson, LANSCE-2
Aleene Jenkins, ESH-DO
Ben Laake, ESA-WE
Susan Martinez, BUS-3
Kevin Ott, C-SIC
Jerome Paul, DX-7
Robert Reid, ESA-EPE
Evan Rose, DX-8
Patrick Schafstall, AAA-TPO
Robert Shea, X-4
Stuart Trugman, T-11
Esther Vigil, T-7
Bethany Wannigman, CCN-DO
Michael West, E-CO
John Wills, T-1

10 Year

William Atkins, NIS-3
Anne Brown, ESH-2
Glenda Bustos, NMT-16
John Eilert, ESH-2
Rhonda Holloway, EES-DO
Sharo Jennings, NMT-3
Toni Mork, NMT-DO
Paul Nelson, ESH-10
Hugo Ojeda, FWO-DF
David Sigeti, X-8

5 Year

Terri Abeln, MST-6
John Ambrosiano, CCS-1
Nancy Ambrosiano, CER-20
Allen Baca, ESA-WE
Eli Ben-Naim, T-13
Anita Gallegos, HR-DO
Kristin Gardner, NIS-8
Glen Hansen, X-8
Matt Kirkland, X-4
Bryan Laubscher, NIS-4

Samuel Letzring, P-24
Lawrence Lucero, DX-1
Yvette Maes, ISEC
Anthony Mancino, ESS
Eric Martens, NIS-8
Paul Moniz, NMT-9
Carlene Naranjo, CCN-2
Jennifer Olsen, IM-8
Gilbert Peralta, P-23
Donald Quintana, ESA-EPE
Thomas Rising, L, D-7
Wolfgang Runde, C-INC
Darren Sandoval, NMT-5
Bernd Schlei, T-1
Robert Sedillo, DX-8
Christopher Scully, ESA-DE
Brian Stafford, X-8
Billy Taylor, MST-8
David Teter, MST-6
John Veilleux, E-ET
Duc Vo, NIS-5
Mark Welsh, NMT-4
Kevin Witherspoon, NMT-8

This month in history

July

July 6, 1687 — Sir Isaac Newton's "Principia Mathematica" is published

July 8, 1776 — First public reading of the Declaration of Independence

July 20, 1918 — baseball declared a nonessential occupation and players are told by the Secretary of War to seek "employment to aid successful prosecution of the war or shoulder guns and fight"

July 19, 1921 — Nobel laureate and medical physicist Rosalyn Yalow was born. Yalow, Andrew B. Schally and Roger Guillemin in 1977 were awarded the Nobel Prize in medicine. Through her research on medical application of radioactive isotopes, Yalow developed RIA, a sensitive and simple technique used to measure minute concentrations of hormones and other substances in blood or other body fluids

July 8, 1933 — Karl Jansky discovers radio emissions from the Milky Way, which is the birth of radio astronomy

July 17, 1945 — work on the plutonium gun bomb is abandoned after measurements of the spontaneous fission rate of plutonium show it is too high for gun assembly

July 26, 1945 — Raemer Schrieber leaves Los Alamos for Tinian Island with the core of Fat Man

July 18, 1984 — Svetiana Savitskaya of the former Soviet Union becomes the first woman to walk in space

July 4, 2001 — at approximately 10 a.m. EDT, is Earth aphelion; the planet Earth reaches that point in its orbit, aphelion, when it is the farthest from the sun, about 94,510,000 miles

Cruising down memory lane in rebuilt cars

by Michael Carlson

Five Laboratory workers, who share a passion for the open road, enjoy their cruises down memory lane in the old cars they rebuild. Having been friends during the course of 25 years, they've formed a small group to help each other create the street-rods of their dreams.

Bob Carpenter of Materials Technology and Metallurgy (MST-6) is putting the finishing touches on his '51 Henry J DeLuxe. Manufactured by the defunct Kaiser-Frazer Corporation in Willow Run, Mich., an estimated 43,000 DeLuxe cars were produced in 1951 and came with a four or six-cylinder engine.

Carpenter's reconstructed Henry J will have coil-over suspension and a 1958 hemispherical combustion engine made by Chrysler Corp. Often referred to as a "hemi," similar engines were used in Chrysler's 1955 C-300 and served briefly on the NASCAR circuit.

He drove a Henry J while attending Northern Arizona University. The love and nostalgia he felt for that car prompted him to buy a similar model six years ago from a private owner in Santa Fe.

With particular interest in suspension, he's helping co-worker Brian Bartram of Materials Technology: Metallurgy (MST-6) with his '41 Ford pickup that will have rear Chevrolet Corvette suspension and a tune port injected 350-cubic-inch, V-8 engine from the Camaro family of cars.

Bartram, who took up the upholstery craft about a year and a half ago, is used to working with metal, but is now learning to sew. With no formal training, he said he learned by reading books on the subject.

"It doesn't take long to get a feel for it," said Bartram, a machinist by trade and an 18-year employee of the Lab.

Tim McCurdy of Power Source Technology (NMT-9) works on engines. He rebuilt his first engine in high school, a Ford 351 Cleveland that belonged to his 1970 Mustang Mach 1, the first car he ever bought. Recently, he built the engine for Carpenter's Henry J using the best parts from five donor engines.

A machinist by trade, McCurdy is building a Model-A Ford that will have a 302 Chevy engine. With Carpenter's help, he is reconstructing the chassis that will include the rear-end of a Ford truck.

He said he prefers Chevy engines because many of

the parts are "readily available and cheaper than other brands."

David Sandoval and Fred Edeskuty do bodywork. Edeskuty of Weapons Engineering (ESA-WE), started working on cars as a 10 year old. As an adult, he's beginning to specialize in paint and bodywork partly because of Carpenter's "prodding."

"Bodywork has always been one of my favorite parts of automotive building," said Edeskuty. "It's easy to get good at what you do by specializing (in one segment of automotive construction)." He said specializing requires less equipment, tools and shop space.

Sandoval of Polymer and Coatings Group (MST-7) is building a '33 Ford pickup. His modifications include a reduction of the roof height by three inches to give his truck a better look. It will have a Chevy 350 motor and a turbo 350 transmission. Even though he loves the bodywork process, he enjoys the cars when they're finished.



Top: Bob Carpenter's Henry J sits idle as it awaits the installation of its body. The engine, a 1957 or 1958 Chrysler Corp. Hemi, already has been mounted to the car's chassis. (Inset) Carpenter's reconstructed Henry J will have an engine similar to ones used briefly on the NASCAR circuit as well as some '50s era Chrysler vehicles. Photos courtesy of Carpenter



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