

Image display unit shows Congress how to easily map reams of statistics

Goddard gave members of the U.S. Congress previews of a new concept in quick information display June 12 and 13 at the Capitol Building. A similar exhibit was held at the White House June 19.

The demonstrations, in cooperation with the Commerce Department's U.S. Bureau of the Census, showed how reams of statistics on housing, education, etc. can be rapidly translated into full-color, easy-to-comprehend maps depicting national trends.



President Jimmy Carter greets Goddard people at the June 19 White House demonstration. They include (L to R), John Quann, Deputy Director Ed Smylie, and John Dalton.

The conversion was made possible by linking a remote terminal by microwave to Goddard's computerized image display system. The system normally applies satellite imagery to studying the atmosphere, the oceans and other Earth resources. Within seconds after data was punched into the terminal, a map representing the information flashed onto a screen above the audience.

The Executive Office of the President arranged for the special showings to stimulate thought about the need for a comprehensive system to pull together the tremendous amount of public statistics needed by analysts and decision makers.

Goddard's John Quann, Jim Billingsley, and John Dalton, all of Code 930, were responsible for the demonstration. They were supported by Goddard's TV group (Code 512), including Henry Wagner, John Arslania, Don Cannan, Paul Moss, Lars Nielsen, and Al Irvin.

"The second day at Congress we had standing room only," said Quann. He alternated with Ed Zimmerman, Executive Office of the President, and Fred Broome, Census Bureau, in interpeting the displays to the audience.

New Network Operations Control Center

Goddard makes room for the 1980's

Construction was started last month on the Center's new \$1.4 million Network Operations Control Center (NCC). When completed NCC will be known as Bldg. # 14-South. Due to go operational on 1 July, 1980, 14-South will have three floors literally filled "with wall-to-wall automation," as Ray Davis, Code 850 Project Coordinator, recently commented.

Unlike the present Bldg. # 14 Network Operations Control Center (NOCC), which makes wide use of

network control personnel employing "manual intervention," the NCC concept is based upon maximum use of computerized management techniques.

Large scale Univac 1100/20 Central Processing Units (CPUs), augmented by seven micro computer systems, will interface flight controllers and NASA communications facilities to accomplish such tasks as real time scheduling, long term scheduling, schedule forecasting, network testing and simula-

Continued on page 2



The "Grand Canyon of Mars," the Valles Marineris, photographed by Viking 1 at 31,000 km above the planet.

Rift valleys of Mars reveal plate tectonics once began on planet

"Mars is a fossilized record of an 'almost-Earth,'" says Herbert Frey, a U. of Md. Research Associate in Geophysics Branch. "The planet shows a beginning of continental plates forming as they did on Earth, but only a beginning."

Frey, a planetologist, makes this observation from his work in comparing crustal evolution of other planets with the Earth, and the discovery that a large martian canyon complex, the Valles Marineris, "appears to have a rift valley-like structure similar to the rift systems of East Africa."

The Valles Marineris are fault controlled canyons up to 200 km wide and several hundred km long located slightly south of the martian equator. The pattern of the canyons seem clearly related to the largest crustal swell on Mars, the Tharsis region, where the largest martian volcanoes are found.

The association of the rifts with the crustal swell, along with the comparability in length of the Valles Marineris with the rifts of East Africa, suggest to Frey that processes of rift formation were the same on both worlds.

Continued on page 2

GOES-3 flies to orbit

The successful launch of the GOES-3 by Goddard's Delta Launch Vehicle from Cape Canaveral on June 16, provides a key element in the Global Weather Experiment which begins this December.

The world-wide weather experiment will be the largest international scientific experiment in history, with more than 140 nations participating.

The year-long accumulation of meteorological and oceanographic data will be made by nine satellites and scores of ships and aircraft, while thousands of surface and upper air observations will be made daily by several hundred buoys in the Southern Hemisphere and by conventional methods elsewhere on Earth.

"GOES-3 will cover the western half of the United States," says Project Manager Bob Pickard.

The experiment is part of the Global Atmospheric Research Program (GARP), sponsored by the World Meteorological Organization of the United Nations. To be conducted throughout 1979, it will provide scientists with millions of pieces of information from all over the world.



Technicians prepare Goddard's International Sun-Earth Explorer-C for tests in the Dynamic Test Chamber which has since been decommissioned.

Planned launch date for the satellite is for July 23 about mid-morning aboard a Delta Launch Vehicle from Cape Canaveral, according to Goddard Project Manager Jerry Madden.

In its planned orbit some 1.5 million miles from the Earth towards the Sun, the ISEE-C will monitor the fluctuating solar wind as well as events on the Sun such as solar flares.

Rift Valleys on Mars

Continued from page 1

On Earth the rifts developed from upheavals in the slowly churning molten rocks deep within the planet, and signalled the beginnings of plate tectonics, the formation of the continents and their separation to create the oceans.

But on Mars, the process of rift formation barely began. Elsewhere on the planet there are no major rift valleys with which the Valles Marineris might have connected to form a complete plate boundary.

Why?

Frey believes Mars simply ran out of sufficient internal heat too soon to form continents. "Most planets start their evolutionary development at high temperatures," says Frey. "How fast a planet cools off depends ultimately on the ratio of its radiating surface area to its volume, a measure of heat loss which is greater for smaller planets."

Mars, a planet smaller than the Earth, cooled more rapidly; and so after reaching a peak activity more than 1 billion years ago, geologic activity on Mars is running down. The Earth, meanwhile, continues to develop dynamically in ways Mars never did.

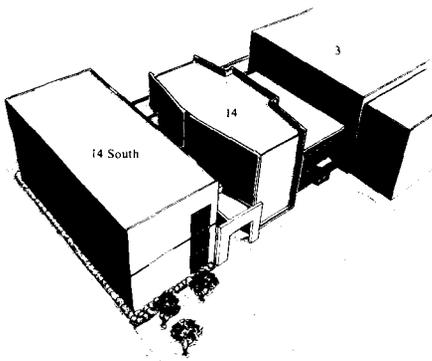
"Mars will never have plates, nor plate motion," says Frey. "The planet has already come as close as it can to being Earth-like in its evolutionary development."

The lack of plates on Mars has been useful in the study of the Earth's early history, Frey notes, providing clues which would not otherwise be available. Though Mars has ended its active phase of development, and slowly is slipping into inactivity, the features formed during its prolonged evolution remain today as important signposts describing the very fundamental processes of planetary evolution that shaped not only Mars, but the Earth as well.

Goddard makes room

Continued from page 1

tion, performance monitoring, telemetry quality, spacecraft acquisition and tracking based on orbital data provided by the NASA Orbital Support Determination Facility (ODF).



Architect's plan for the new Network Operations Control Center Building 14 South. The present control center is in Building 14.

NCC's functional design is geared to the 1980-1990 period in which significantly broader and more complex project support responsibilities will require upgraded Space Tracking and Data Network (STDN) management techniques because of the Tracking and Data Relay Satellite System (TDRSS), phasing down of several Spaceflight Tracking and Data Network (STDN) ground stations, support of the Space Transportation System involving Spacelab and the Interim Upper Stage (IUS), decline in the required support of expendable launch vehicles, increased complexity of Orbiter operations, support of integrated deep space missions, and increase in the amount of payload and control data delivered at data rates exceeding the present NOCC system.

Jim Robinson, Code 270, is Construction Project Manager; Carl Roberts, Code 850, is Technical Coordinator.

GODDARD NEWS is published by the Office of Public Affairs at the Goddard Space Flight Center, Mail Code 202, National Aeronautics and Space Administration, Greenbelt, Maryland 20771.

Editor: Don Witten
 Asst. Editor: Charles Recknagel
 Editorial Asst:
 Patricia Ratkewicz
 Phone 4955

People

THAT'S A FACT

POP TUNE THE SONG SUNG MORE OFTEN THAN ANY OTHER IS... "HAPPY BIRTHDAY TO YOU". IT WAS WRITTEN IN 1893 BY MILDRED AND PATTY HILL AND WAS ORIGINALLY CALLED "GOOD MORNING TO ALL".



HOW TO REACH...
THE END OF A RAINBOW!! IT'S SIMPLE—JOIN THE PAYROLL SAVINGS PLAN AND AUTOMATICALLY A SPECIFIED AMOUNT IS SET ASIDE FROM YOUR PAYCHECK AND USED TO BUY U.S. SAVINGS BONDS. YOU'RE PUTTING HARD CASH IN THE POT AT THE END OF THE RAINBOW!
○○○○

SUPERSPUD!
J.B. SWAN OF LOVELAND, COLO., GREW A POTATO THAT WEIGHED 96 POUNDS 10 OUNCES! IT WAS CALLED THE "MAGGIE MURPHY".



Day Care Center marks 5th year

The Goddard Child Development Center opened five years ago as parents sought to establish a quality day care program.

There were many fine nursery schools in the area, but their half day programs were not compatible with schedules of working parents. Thus, the parent organized and administered Child Development Center opened in June of 1973.

Today, it is functioning on a sound but lean fiscal basis with an educational philosophy that has evolved over the

materials are open-ended: a three year old may work with them bringing certain skills to explore, manipulate, and discover, leaving the activity with a higher level of skill.

The six year old also comes to the same materials with more experience and more sophisticated skills to work and add to concept formation. There are opportunities for making choices as children gain proficiency in decision-making.

That old Socratic method of teaching, the constant questioning, is used to help children seek alternatives.

The emphasis on creativity and decision-making extends through the curriculum as children work in reading, readiness, math, language arts, social studies, science, music, art and physical education.

"... an educational philosophy that has evolved over the past five years ..."

Center barbershoppers to compete nationally

Goddards "Space Chords" are on their way to the Middle Atlantic Championship as members of "Hometown U.S.A.," a 64-man chorus that will represent Montgomery County.

The "Chords" will be joined there by Goddard's Vince Arillo and Lee Murphy, and former ORI employee Joe Deskevich.

The national barbershoppers' contest is to be held in October in Washington D.C.

Garden Club tip

Do something wild this month—pick some bramble berries.

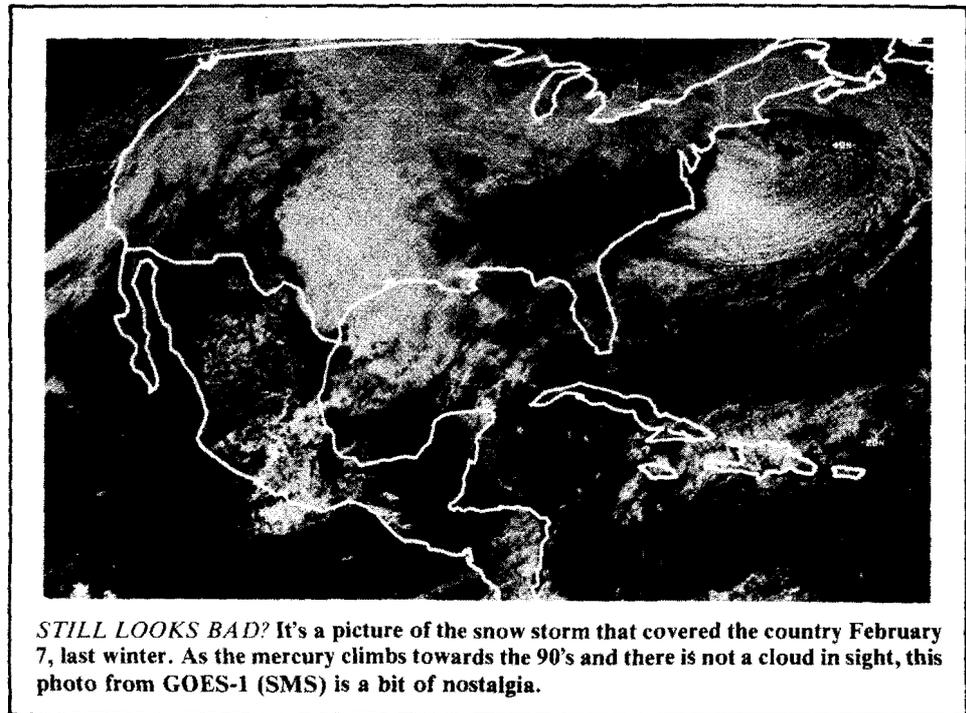
Black raspberries will be ripe soon. Look for bushes with chalky green colored canes and three leaflets per leaf. Wineberry bush fruit will ripen early this month. The canes are covered with weak, maroon thorns and the leaves have three leaflets. Berries are red and waxy. Blackberries are also ripening. The bushes have dark green canes, nasty thorns, and five leaflets per leaf.

Goddard mourns ...

Theodore F. Morosko, 54, Management Analyst in Code 220. Died June 9, 1978.

past five years to provide a strong foundation for implementation of the curriculum by degreed teachers with specialized training in early childhood education.

This curriculum is designed to provide opportunities for growth of the total child in the intellectual, emotional, social, and physical areas. Mate-



Recognition for ...

35 YEARS CAREER SERVICE

A & M Directorate employees received career service and professional excellence awards at Goddard in a special ceremony on May 10.

Awards were also presented to the members of the A & M Entertainment Committee, the Management Support Office, the Procurement Management Division, and the Technical Information and Administrative Support Division. Presidential Recognition Awards were presented to John Garrett, Hay K. Lee, and Henry Obler.

R.E. Smylie (right) presents 35 year service award to Raymond Eckert (left). Other recipients of the award are: Eleanor Barber, William Beauchamp, Charles Casto, John Deviese, John Fay, David Friedman, Joseph Gentilini, Charles Hamilton, John Kley, John Lindstrom, Robert O'Steen, Charles Shearer, and Alfred Shehab.

Smylie also presented the 30 year awards.



25 YEARS CAREER SERVICE



L to R, are Bruno Seppi, Stanley Corwin, Thomas Dixon, John Wiggins, and Thomas Mooney. Recipients not pictured are Clifford Cobb, George Freas, James Lacy, Albina Stecko, George Vogt and Alfred Wolfson.

William Mecca, A & M Director, presented the 25 and 20 year service awards.

30 YEARS

30 year awards were presented to: Rita Burns, Raymond Capo, Thomas Donaldson, Charles Kearney, Willis Mason, Virgil Morgan, Madeline Simmons, Phillip Snyder, Olen Taylor, Georgia Williams.

A & M GOLD STAR AWARD



20 YEARS

20 year awards were presented to: Hugh Bauer, Frances Baumgartner, John Boegner, John Boggess, Helen F. Burritt, David Butcher, William Duley, Lillian Fleenor, Robert Flick, Elizabeth Gasch, John A. Hunt, Raymond Jameson, John A. Jones, Shirley Kammerer, Robert Keefe, Gerald Keesey, Thomas V. Lee, Alfred Martin, Albert Newman, James W. Pusey, Ronald Sandler, and John Small



William Mecca (left) presents a Gold Star Award to Linda Westman (right). Other recipients of the award are: Ella Andrew, Dave Butcher, Marilyn Fowler, Virginia Walker.

The Snow Removal Crew received Gold Star Awards for "the winter of 1977-1978." Members are:

- | | |
|----------------------|------------------|
| Stan Manual—(Leader) | Ernest Lynch |
| Edward Ashelford | Robert Monroe |
| Leo Belliveau | Theodore Murphy |
| William Bumbrey | Art Pirman |
| Edward Duley | Ralph Ryder |
| Charles Duelley | Francis Schultz |
| Robert Foster | James Stillwell |
| Allen Frenzel | Ralph Strnad |
| Charlie Holloway | Anthony Swann |
| Andre Jackson | Charles White |
| Robert Jenkins | Wesley Whittaker |
| Nickles Keenan | Raymond Krebs |
| Everett King | Richard Stewart |
| Philip Kinney | Herbert Chapman |
| Thomas Leonard | |