NASA
National Aeronautics and Space Administration

GODDARD NEWS

Goddard Space Flight Center Greenbelt, Md. Vol. 29 No. 14 October 15, 1982

Message from the Director

COMBINED FEDERAL CAMPAIGN

Our campaign started on October 4. I am asking each of you to open your hearts and seriously consider the importance of this campaign and what it will do for millions of less fortunate people.

The concept behind the CFC is to help. This annual campaign asks Federal workers to join together to pledge contributions that will support the 290 voluntary agencies directly serving people in need in our communities, in our nation, and in countries overseas.

Goddard's employee committee for the campaign has established a goal of $202,000 for this year. You and I have the opportunity, now, to make our concern for others a personal commitment. Please consider making your pledge through payroll deduction; this is the easiest and most convenient way to give. The amount you indicate on your pledge card will be deducted from your paycheck each pay period in 1983, spreading your gift in small installments over a 12-month period.

The list of 290 agencies and services supported by CFC funds is contained in the contributor's leaflet that will be distributed to each of you. You may designate your donation to a specific agency or make an undesignated contribution that will let your funds work where needed. Your gift is also tax deductible.

Goddard has always been proud of its record for generous giving. Please try to remember that while we may feel the times to be tough and uncertain, there are millions of people who are desperately in greater need of help. I hope you will join me in upholding Goddard's fine tradition of sharing with others.

Noel W. Hinners

Dr. Frank B. McDonald named NASA's chief scientist

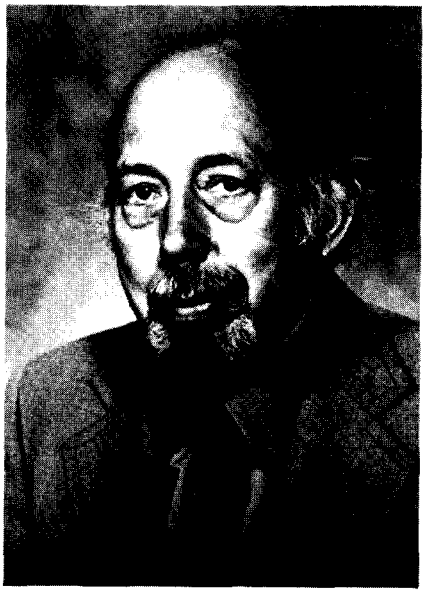
Dr. Frank B. McDonald, Chief of Goddard's Laboratory for High Energy Astrophysics, has been named NASA Chief Scientist.

As Chief Scientist at NASA Headquarters in Washington, D.C., he will serve as the principal advisor to the Administrator and other senior officials on scientific aspects of NASA activities.

McDonald joined Goddard in 1959 as Head of the Energetic Particles Branch in the Space Science Division. In 1970, he became Chief of the Laboratory for High Energy Astrophysics. During these years, he has been Project Scientist on nine NASA satellite programs and the principal investigator for many space experiments.

In the past year, he has been detailed to the White House Office of Science and Technology Policy as a Senior Policy Analyst. Concurrent with his NASA career, he has been Adjunct Professor of Physics at the University of Maryland, College Park. Prior to joining NASA, he was an Assistant Professor of Physics at the University of Iowa, Iowa City.

A native of Columbus, Ga., McDonald received his bachelor's degree from Duke University, Durham, N.C., in 1948. He received his master's degree in 1951 from the University of Minnesota, Minneapolis. From 1951 to 1953, he worked on a predoctoral Fellowship of the Atomic Energy Commission, Oak Ridge, (Tenn.) at the University of Minnesota. He earned his doctorate there in 1955.



Dr. Frank B. McDonald

Inside

NACA reunion next month

The first NACA reunion, held almost six years ago in Asheville, N.C., attracted approximately 600 people who were a part of NACA from 1915 to 1958. The group and their spouses traveled from all parts of the country to spend a weekend renewing acquaintances.

Since that time a great deal of interest has been expressed to have a second get-together. The NACA Reunion Committee is making final plans for this reunion to be held in November 1982 in Williamsburg, Va.

The Williamsburg Hilton Conference Center on Route 60 has been reserved from November 12 through November 14. The Hilton is new, attractive and large enough for a big gathering. A package deal has been arranged to cover lodging, meals and entertainment for Friday

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Kondo heads Commission 44 during IAU meeting in Greece

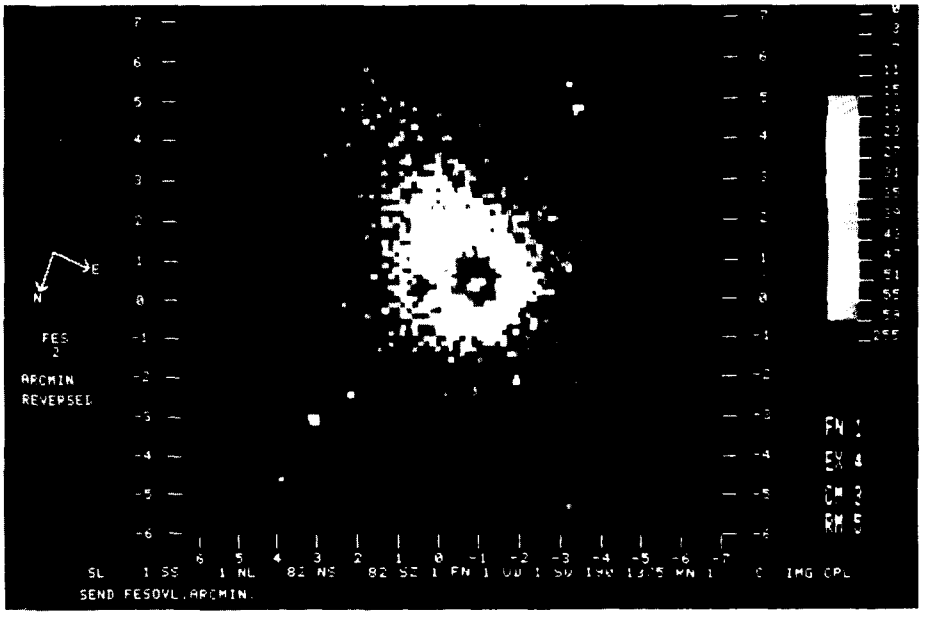
NASA IUE Project Scientist Dr. Yoji Kondo (code 683) recently returned from the triennial meeting of the International Astronomical Union (IAU) in Patras, Greece, after heading a commission on Astronomy from Space (Commission 44) and serving on several others.

In addition, Kondo was named vice president of Commission 44 for the next triennial period, 1982-1985.

During the 10 day conference, Kondo was acting president of Commission 44. In that capacity, he organized and chaired its business session, and represented it during meetings. Kondo also served on the Organizing Committee of IAU Commission 42 (Commission on Close Binary Stars), and organized and chaired a joint session of Commissions 42 and 44 entitled 'UV and X-ray Observations of Interacting Binary Systems.' The joint session drew over 100 people and its proceedings will be published in the Highlights of Astronomy publication.

Kondo has also received an invitation to serve on the organizing committee for an IAU colloquium on interacting binary stars, planned for June 1983. Kondo became project scientist for the International Ultraviolet Explorer project last March, replacing Dr. Albert Boggess, who had headed the project for the past several years.

Other Goddard scientists present at the IAU meeting were: Drs. John C. Brandt, Carol J. Crannell, Joseph F. Dolan, Andrew G. Michalitsiano, Theodore R. Gull, Bertram D. Donn, and Mr. Theodore P. Stecher. Dr. Brandt was also instrumental in the IAU meeting, participating in the planning for the Space Telescope and the International Halley Watch Program.



Comet Austin (1982g) as imaged by the Fine Error Sensor of the International Ultraviolet Explorer Sensor of the International Ultraviolet Explorer (IUE) satellite on August 1 prior to spectrographic observations of the comet's ultraviolet emissions. The observations were obtained for an investigation headed by Dr. M. F. A'Hearn of the University of Maryland while the IUE was being controlled from the Goddard Space Flight Center. At the time, Comet Austin was about 42 million miles from the Earth. In the photo the discernable diameter of the coma surrounding the comet's nucleus is about 12,000 miles. A portion of the comet's tail is visible, extending upward and to the left (to the southwest).

Mail your story to the Goddard News, Code 202, or call the Editor at

344-8102

TOOTHPASTE TALE:

A point to pun-der

Astronomers looking into the sky one night noticed that a baby planet had broken out of the orbit of its mother sun. The little planet darted about in elliptical, spiral, elongated and circular orbits—in and around other planets it zoomed. "Junior, come back," said the mother sun. Finally, Junior came zipping back close to its mother, proudly exclaiming: "Look, Ma, no gravities!"

Former Goddard scientist active in science camp

by Pamela C. Patterson

Why would a former Senior Scientist with Goddard's Laboratory for Space Physics spend two weeks each summer at a national science program for recent high school graduates? Ask Dr. Isidore Adler, professor of geochemistry and previous chairman of the Geochemistry Division at the University of Maryland.

Since 1969, Adler has been donating his time and talents to the National Youth Science Camp (NYSC), located in the Monongahela National Forest of West Virginia. Founded in 1963 as part of West Virginia's centennial celebration, the National Youth Science Camp was designed to recognize the nation's most outstanding recently graduated high school science students. The camp's hallmark is its lecture series, featuring recognized leaders from many fields of human endeavor. This, combined with a varied recreational program including backpacking, rock climbing and spelunking, makes for a unique three-week experience that is not soon forgotten by the one hundred delegates.

Adler has been a visiting lecturer to the NYSC for the past fourteen summers. Invited in 1969 to speak on his involvement with the early planning stages of the Apollo missions, Adler has returned every summer since to enlighten the delegates on various aspects of lunar exploration and research. His lecture titles have ranged from "A Retrospective Look at the Planetary Exploration Program" to the lighter "Scientists are Like People."

Adler's first visit to the NYSC was a one-day affair. When he was invited to speak again in 1970, his wife Anne joined him on the trip to West Virginia. The Adlers soon came to be familiar and welcome faces around the camp. Anne Adler, now a retired teacher in special education, lends her artistic talents in the camp's arts and crafts workshop. In recognition of their continuing contribution of time and energy to the NYSC, the two were named honorary staff members.

What were Adler's first impressions of the National Youth Science Camp? "I found it a very exciting place, filled to the brim with the brightest kids," he said.

Adler said that he was initially a bit apprehensive about presenting his work to a hundred "whiz kids." His colleagues at Goddard warned him, "Don't try to snow these kids; they'll demolish you." He said that his lecture was so well received, however, that he was encouraged to return the following summer for further exchanges with the students.

After 14 sessions in West Virginia, Adler has seen a few changes. The most marked change came in 1975, when the camp began accepting female delegates. That year there were thirty-five women; last summer there were forty-nine.

Although the admission of females to the NYSC was the most obvious change that Adler has witnessed, he has seen other, more subtle differences as well. He notes that the wealth of the honor seems to have been spread out a bit more evenly in recent years. The majority of NYSC delegates used to come from large metropolitan areas, whereas today they tend to hail from more rural districts where there are often fewer opportunities for advancement.

When asked what he thought to be the most important aspect of the NYSC, Adler mused. "Well, the formal exchange

Dr. Isidore Adler

of knowledge between campers and lecturers—that's important," he said. "But it's not the most important thing. Rather, it's the opportunity these kids have to try out their ideas on the senior people. Maybe they're a little worried about their careers or their future. This is a great place for them to exchange ideas and thoughts with the senior people in their chosen fields."

In addition, Adler said, there is the influence of being surrounded by one's peers, all of whom are also top-notch

Continued on next page

Informal discussions are a part of daily activities at the National Youth Science Camp. Here delegates listen intently as Dr. Adler speaks on his work and research.

Dr. Adler

Continued from previous page

students and high achievers in many fields of endeavor. The camp's atmosphere prepares the delegates for what they may face in college, when many a student suddenly discovers that he is the proverbial small fish in a large pond.

Why does Adler return to the NYSC year after year to give freely of his time, knowledge, and wit? "Speaking as an educator," he said, "I find at Science Camp some qualities that are often lacking in the day-to-day routine at school: enthusiasm, motivation, and dialogue. I really enjoy mixing it up with the kids. They're a lively bunch. I love the outdoors, so I go on caving and whitewater kayaking trips with the campers; we have a marvelous time."

After 14 years with the National Youth Science Camp, Adler said he has come to regard many of the staff and former campers as members of his ever-growing family. He said that the delegates also form strong bonds among themselves: "Every year it amazes me that in only three weeks these kids can become so close. A good many of them develop strong friendships here that will last a lifetime. It's a totally relaxing atmosphere. Every year Anne and I come away from this place very refreshed."

Adler often participates in outdoor activities with the campers. He is shown here on a spelunking trip.

NACA

Continued from page 1

through Sunday brunch. Another package has been prepared for those who do not plan to spend the nights in Williamsburg. The hotel also offers special rates for Thursday arrivals or late Sunday departures.

Special rates are available for touring Colonial Williamsburg, including the newly decorated Governor's Palace, and golfers can arrange to play at nearby Kingsmill Golf Course or at several other courses in the area. Shopping at the Williamsburg Pottery, the Village Green Shops and the new Kingsmill Shops should be a delightful way to spend any free hours. Buses or rental cars can be obtained if desired.

For those who plan to fly to the reunion, special air fares have been obtained from San Francisco; Huntsville; Cleveland; Washington, D.C.; Houston and Orlando to airports at Newport News, Norfolk and Richmond.

NASA employees who also worked for NACA are welcome to participate in the reunion. For a reservation form, write to NACA Reunion Committee, 20 Lakeshore Drive, Newport News, Va. 23602, or call (804) 722-8454 or (804) 722-8768.

Omidvar derives new formula for estimating life of excited atom

A Goddard scientist has derived two new formulas for estimating the life of highly excited atoms, one of which replaces an empirical formula used for almost 50 years.

Dr. Kazem Omidvar (code 963) presents his findings in an article accepted for publication by the Physical Review, a scientific publication of the American Physical Society. The formulas provide the basis for better calculations in such fields as planetary atmospheres, astrophysics, and atomic physics.

Atomic and molecular species can get excited by radiation or through collisions with other atoms, molecules, or electrons. Excited states of atoms and molecules are unstable against radiation, and excited particles return to their stable positions by emitting radiation.

Knowledge of lifetimes of the excited states of atomic and molecular species is essential in the fields mentioned above; in particular, in LIDAR measurements of the atmospheric atomic and molecular species, a knowledge of the lifetime is vital, since signals received by the fluorescing excited atoms and molecules are directly influenced by the lifetime of these particles.

Similarly, in recent years, radio frequency radiation coming from the interstellar ionized region has been discovered. The radiation eminates from the highly

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PEOPLE

STS-1 astronaut Bob Crippen (l), NASA Associate Administrator for the Office of Space Flight, Maj. Gen. James A. Abrahamson (c), and Deputy Director of Kennedy Space Center George Page visited the Center recently to brief participants in a STS user's conference. Participants attended the conference to get more information on the reliability and availability of future shuttle flights.

Luncheon planned

The Support Group for Administrative, Technical and Scientific Women, a subcommittee of the Women's Program Advisory Committee (WPAC) is presenting a luncheon at the Recreation Center, November 9 from 11:30 am to 1:00 pm.

The purpose of the Support Group is to promote interaction, communication, and enhancement of professional growth for the women who work in the administrative, technical, and scientific areas at Goddard.

The theme for the luncheon will be "Progress and Accomplishments of Women at Goddard." Speakers will discuss briefly the past, present, and future regarding women at Goddard.

The cost of tickets for the luncheon is $4.50. All professional women are encouraged to attend. For more information, call Peggy Wells, x6101 or Bennie Powers, x4993.

STS-5 astronauts

The crew for STS-5, the first operational flight of the Columbia. From l-r: Joe Allen, mission specialist; Vance Brand, commander; Robert Overmyer, pilot; and Bill Lenoir, mission specialist. STS-5 is scheduled for a November 11 launch.

Omidvar

Continued from page 4

excited states of the hydrogen atom with quantum numbers 100 or higher. The lifetime formula by Omidvar gives an accurate estimate of the mean life of these atoms.

According to the first formula, the lifetime of an excited state of a hydrogenlike atom in a quantum state specified by the quantum number n behaves with respect (is proportional) to n for large n as $n^5/\ln(n)$.

Prior to this formula, workers in the field used an empirical formula established in 1933, according to which the lifetime is proportional to $n^{4.5}$. Comparisons with the few existing exact calculations show that Omidvar's formula is more accurate than the empirical formula.

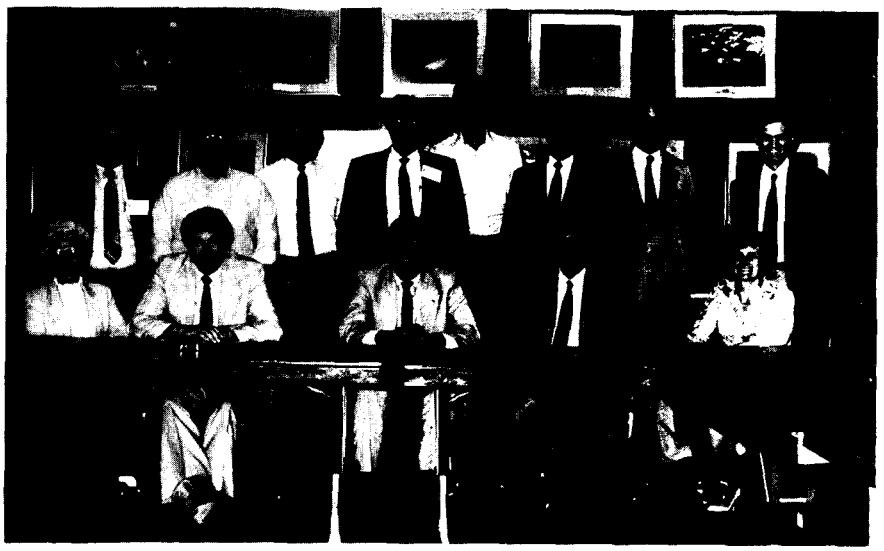
Omidvar's second formula shows that the lifetime of an excited state has a simple relationship to its angular momentum quantum number. This is a new finding. Previously no known law had existed for the relation between the angular momentum and the lifetime.

...reaching people who need you...

ANOTHER LITTLE MIRACLE

If you've ever loved someone who's fighting a deadly disease, you know what fear is. You know what hope is too. And you pray for a miracle—because they do happen. We make them happen with your CFC gifts. Medical research to find the cures, a helping hand to those afflicted now, the latest information on diagnosis and treatment for your doctor. Please remember us this fall.

that's what the CFC is all about.



Members of Public Technology, Inc.'s (PTI), Advisory Council on Research and Technology Transfer visited Goddard recently for a tour and briefing. The group was comprised of city administrators and executives of PTI.

Back row (l-r): Orville Powell, Gainesville, FL.; Larry Rice, Highland Park, IL.; Thomas Osborne, Greensboro, NC.; W.E. McEachern, Gainesville, FL.; Keith Frederick, Lower Merion, PA.; John Parker, PTI; Costis Toregas, PTI; Ted Shogry, PTI. Front row (l-r): Helen Boosalis, Lincoln, NE.; Terry Novak, Spokane, WA.; Norman Rice, Seattle, WA.; Barry Selberg, Fort Collins, CO.; Mary Neuhauser, Iowa City, IA.

Gray participates in health conference

Goddard's chief, Health, Safety & Security Office, Leven Gray, presided over a session of the Thirty-Seventh Annual Federal Safety and Health Conference October 20 as part of the 70th Annual National Safety Congress and Exposition. The three day exposition was held in Chicago, October 18-21.

The annual exposition brought together safety professionals and practitioners from around the world to exchange accident prevention ideas, information, and techniques. More than 500 speakers and 150 sessions were scheduled for this year's event and some 350 exhibitors displayed the latest developments in safety equipment technology.

NASA GODDARD NEWS

The GODDARD NEWS is published monthly by the Office of Public Affairs, Goddard Space Flight Center, Greenbelt, Md. 20771. Deadline for submitted material is two weeks from the date of publication. For additional information on articles contained herein, contact the editor on (301) 344-8102.

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