DECOR BEACON LECTURE

Dr. Timothy M. Heckman, Johns Hopkins and Maryland Universities, presented his recent research on quasars at the December meeting of National Capital
Astronomers. He first reviewed current knowledge and questions about quasars.
His results strongly favor the cosmo-logical interpretation: quasars appear
actually be at the distances implied by their redshifts. The work also offers
further indications of quasars' properties.

redshift (Z), the shift of spectral lines toward longer wavelengths by velocity of
recession, is given by:

\[ Z = \frac{\lambda_0 - \lambda_e}{\lambda_0} \]

Where \( \lambda_0 \) is observed wavelength and \( \lambda_e \) is emitted wavelength.

This interpretation states that remote objects' distances are proportional
to their redshifts. By this interpretation, quasars, billions of light years
distant, are the farthest observed objects in the universe. They appear to emit
equivalent energy about 10^{30} lumens during their existence. (C is the
vacuum velocity of light: \( 3 \times 10^8 \) meters per second.) This is \( 10^9 \) times
the energy of an ordinary galaxy. Radiated wavelengths range from radio
to gamma. Between 1981 and 1982, images of the nearby quasar 3C273 taken at one month intervals make the point; they show
components seemingly moving apart at five times the velocity of light!

What could drive a quasar?
I. November -- N. Mauron, Pic du Midi Observatory, reported the detection of a gaseous envelope greater than 1 arcminute in diameter around U Cephei. The observation was made in the sodium D line with a CCD on the 2-m telescope.


4. Minoru Honda, Kurashiki, Japan, discovered a probable nova of 10th magnitude in Aquila.

NATIONAL ASTRONOMERS, INC., a non-profit, public-service corporation promoting astronomy and related sciences through lectures, expeditions, discussion groups, tours, classes, public programs, and publications. President, Geoffrey A. Chester. Star Dust Deadline 15th of preceding month. Information: (301) 329-3621. Material for publication: Robert H. McCracken, Editor, 5120 Newport Avenue, Bethesda, MD 20816.

FIRST CLASS MAIL

TROMBKA TO SUMMARIZE NASA'S SPACE PLANS FOR 1990'S

Dr. Jacob I. Trombka, NASA Goddard Space Flight Center, will address the January 5 meeting of National Capital Astronomers. He will describe NASA's plans for a new, relatively low-cost, two-phase planetary exploration program of Planetary Observers.

The first phase is to be initiated by the Mars Observer, to be sent into Martian polar orbit in the early 1990's. A full complement of remote sensors will study details of the surface composition, atmospheric properties, and climate for a full year.

Other probes to follow include the Lunar Observer, in lunar polar orbit, and a rendezvous with an Earth-crossing asteroid.

The program will study the evolution of the solar system and potential uses of space resources.

The second, rather more ambitious phase, will follow with thebufloon Anakit-ll missions. Contemplated are fly-bys of two or three asteroids and a comet rendezvous near aphelion, to follow through perihelion and some time afterward. The craft will inject a penetrator into the nucleus of the comet to study its chemical, thermal, and mechanical properties.

The 1990's promise to be an exciting time for planetary exploration!

Jacob I. Trombka received his B.S. in 1954 from Wayne State University and his Ph.D. in 1961 from the University of Michigan. Before coming to NASA he was a research physicist at Oak Ridge Institute of Nuclear Studies, a scientist at Oak Ridge National Laboratories, and a senior scientist at Jet Propulsion Laboratory. He is at present a space scientist at GSFC and a visiting professor of chemistry and physics at Maryl.: University. He won the Lindsay Award for Outstanding Scientific Achievement in 1972 and the NASA Medal for Scientific Achievement in 1974. He recently coauthored with Dr. Carl Flechtel the book, Gamma-Ray Astrophysics: New Insight into the Universe. Dr. Trombka is a member of the American Physical Society, the American Nuclear Society, and Sigma Xi.

JANUARY CALENDAR -- The public is welcome.

Thursday, January 3, Tuesday, January 8, 15, 22, 29, 7:30 pm -- Telescopes-making classes at Chevy Chase Community Center, Connecticut Avenue and McKinley Street, NW. Information: Jerry Schnall, 302-8872.

Friday, January 4, 11, 18, 25, 7:30 pm -- Telescopes-making classes at American University, McKinley Hall basement. Information: Jerry Schnall, 302-8872.

Saturday, January 5, 8:00 pm -- Dinner with the speaker at the Ding-Hou Restaurant, 1223 E Street, NW. Reservations unnecessary.

Saturday, January 5, 8:15 pm -- NCA monthly meeting at the Department of Commerce Auditorium, 14th Street and Constitution Avenue, NW. Dr. Trombka will speak.

Friday, January 11, 18, 25, 8:00 pm -- NCA 14-inch telescope open nights with Bob Bolster, 6007 Ridgeview Drive, south of Alexandria on Franconia Road between Telegraph Road and Rose Hill Drive. Call Bob at 960-9126.

Saturday, January 19, 8:00 pm -- Discussion group at the Department of Commerce, Conference Room D. Topic to be announced.