Star Dust

National Capital Astronomers, Inc. Washington, DC (301)320-3621

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Dr. Richard Kerr to Discuss Impacts of Extra Terrestrial Objects and thier Relationship to Mass Extinctions

The speaker at the September 7 meeting will be Dr. Richard Kerr who will talk on the subject ``What Killed the Dinosaurs? - Impacts and Extinctions". Impacts from extraterrestrial objects such as comets, meteorites and asteroids were very frequent in the first half billion years of the life of our Solar System. Fortunately they are less frequent now but it has been proposed that one such collision was responsible for the extinction of the dinosaurs some seventy million years ago. Dr. Kerr is a senior writer with the prestigious journal Science and covers the earth and planetary sciences in its Research News section. In particular, he has written about the Cretaceous - Tertiary extinction controversy for the journal over the last 10 years. He received his PhD in chemical oceanography at the University of Rhode Island in 1977 and has wide interests in the natural sciences. He is well known to many astronomers as the co-author (with James Elliot) of a book on planetary rings. He received a Special Award in 1990 from the American Meteorological Society for the `` consistently high quality of his articles for Science". This promises to be a highly interesting and thought-provoking presentation.

September Calendar..... *The Public is Welcome*

•••• Note Different Meeting Place ••••

Saturday, September 7, 7:30 pm - NCA Monthly Meeting will be held in the Bunim Room at the National Institutes of Health. **For directions refer to map and description on inside back page.**

N.C.A. has reserved space at Frascati's Restaurant in Bethesda for those who would like to have dinner with the speaker before the meeting. Reservations are for 5:30 Sharp! **For directions refer to map and description on inside back page.**

Friday, September 13, 20, 27, 9:00 pm - NCA 14-inch telescope open nights with Bob Bolster, 6007 Ridgeview Drive, south of Alexandria off Franconia Road between Telegraph Road and Rose Hill Drive. Call Bob at (703) 960-9126.

Tuesday, September 10, 17, 24 7:30 pm - Telescope-making classes at Chevy Chase Community Center, Connecticut Avenue and McKinley Street, NW. Information: Jerry Schnall, (202) 362-8872.

Friday, September 13, 20, 27, 7:30 pm - Telescope-making classes at American University, McKinley Hall Basement. Information: Jerry Schnall, (202) 362-8872.

Saturday, Sept 21 at 8:00 pm, October 12 at 7:30 pm, and November 9 at 7:30 pm - *Exploring the Sky* at Rock Creek Park, on Glover Rd. NW, near the Nature Center. For further information call John Lohman at (703)820-4194 (Arlington).

1991-1992 Speaker Schedule: As part of its program for the coming year National Capital Astronomers has arranged talks covering a wide variety of astronomical subjects. Note the dates of the following events so that you can be sure of attending and tell your friends.

- ❑ **September 7:** Richard Kerr (Science) ``What Killed the Dinosaurs? - Impacts and Extinctions".
- ❑ **October 5:** Julie Lutz (National Science Foundation) ``Planetary Nebulae."
- ❑ **November 2:** Alan Boss (Carnegie Institution of Washington) ``The Origin of the Moon".
- ❑ **December 7:** Gregory Paul (author) ``Computers, Robotics and Space Travel".
- ❑ **January 4 :** Maurice Shapiro (NASA) ``How Cosmic Rays get Started".
- ❑ **February 1 :** James Zimbleman (National Air and Space Museum) ``Geology of Mars".
- ❑ **March 7 :** Harold Williams (Montgomery College) ``The Formation of Stars".
- ❑ **June 6 :** Presentation of High School Science Fair Awards (preceded by Pizza Party).

Occultation Expeditions Planned

Dr. David Dunham is organizing observers for the following occultations. For further information call the NCA-IOTA information line (301) 474-4945 (Greenbelt, MD).

Date *Grazing Lunar:*	Time EDT	Locality	Visible Magnitude	Percent Sunlight	Cusp Angle	Minimum Aperture
30-Aug.	04:41	Reston, VA, Potomac, MD	6.5	75	5N	15 cm
31 Aug.	01:55	Currituck, NC	4.6*	66	7N	10 cm
2-Sept.	01:16	Somerset, PA	5.6	44	4N	10 cm
16-Sept.	23:10	Chesapeake Beach, MD	7.4	61	16S	15 cm
2-Oct.	04:29	Fairfax, VA, Largo, MD	7.9	34	2S	20 cm

* Epsilon Arietis, binary, m = 5.1, 5.7, separation = 1.2"

Total Lunar Eclipse 2-Sept. in the DC area (no expedition). Star Cluster M35 will reappear on the dark rim.

Asteroidal:	Time	Locality	Star Mag.	Delta Mag.	Name	Aperture
2-Sept.	01:21	DC, MD, VA	12.0	0.4	(10) Hygiea	25 cm
9- Sept.	05:38	S. Quebec**	8.6	4.1	(505) Cava	15 cm

** Appulse to be observed for possible satellites or path shift. Observers should obtain a finder chart from Dunham or IOTA.

Excerpts from the IAU Circulars

R.N. Bolster

•**1. July 20** - C. Flanagan, Hartebeesthoek Radio Astronomy Observatory, detected a spin-up of the Vela pulsar (PSR 0833-45). The relative change in period derivative was the largest observed in any pulsar.

•**2. July 29** - P. Camilleri, Cobram, Victoria, Australia, photographically discovered a nova of magnitude 8.5 in Sagittarius. A maximum brightness of m = 7 was reported.

•**3. August 3** - M. Della Valle, European Southern Observatory, obtained spectra of Nova Sagittarii with the ESO/Max-Planck-Institut 2.2-m telescope showing strong broad Balmer emission lines indicating expansion velocities up to 9500 km/s.

•**4. August 8** - Visual observations of periodic comet Schwassman- Wachmann 1 indicated that it was undergoing an outburst, having brightened to 12th magnitude.

Eclipse!

Joan and David Dunham

We observed with the Eclipse Edge expedition to Puerto Vallarta, Mexico. We and the 300 other observers saw a beautiful eclipse from a town called Salulitas, about 40 miles north of Puerto Vallarta. We were approximately 2 1/2 miles inside the southern limit of the eclipse. Tom Van Flandern organized and ran this expedition, with the help of family members, a travel agent, a student from Cal Tech who is from Mexico City, and us. The purpose of this expedition was to provide observers for the southern limit of the eclipse path for our continuing series of observations to monitor changes in the diameter of the Sun from total and annular eclipse observations.

The northern edge of the path of totality passed through three locations that seemed, from weather prospects, to be good places to observe, Hawaii, Baja California, and the west coast of Mexico. The southern limit, however, only crossed one good place, north of Puerto Vallarta. We had been worried that we would not get good data from the southern limit, only from the north. In the end, however, it was the northern limit that was not well covered. Alan Fiala, observing the northern limit from Maui, was rained on. The observers who had planned to go to the northern limit in Baja did not, for a variety of reasons -- family, health, and visa problems. Four observers tried to observe the northern limit near Mazatlan, but had weather problems. They went about 6 miles into the path and got a video recording.

Our group went in a bus caravan to Salulitas the morning of the eclipse. There had been some worries that the weather would not cooperate (the rainy season had been underway for several weeks), but Salulitas is on a point of land that juts into the bay. As long as the breeze comes from offshore, the weather is generally clearer there than in Puerto Vallarta. A cloud did cover the Sun for a while between first and second contact, but dissipated as the eclipse progressed. The eclipse cooling was very noticeable, and the site went from being quite uncomfortable to very nice. The official site was a school yard, but many, including Jeff Gerber and Wayne Warren, observed from the beach.

A number of the observers had video equipment, and we showed each other our tapes that evening. David's equipment was set up to maximize the Bailey's beads, and so does not have a good scale for showing the whole eclipse. He did get nice (black and white) images of the inner corona during totality, and missed the actual 3rd contact event. We did not try to take photographs of the totality. A good photograph requires a long focus telephoto (400 mm or more), a sturdy tripod, and someone to take the picture. We had the baby with us and were concerned that the two of us could not take care of three things at once. We already had over 200 lbs of luggage and equipment, and didn't want to add any more carry-ons to our baggage. But we regret not having taken the equipment once we saw how beautiful this eclipse was. We have observed 7 total eclipses (out of 9 tries) and this was by far the most beautiful.

We had hoped with this eclipse to compare the results of several different techniques. We wanted to have visual observers with no aid other than a filter, those using image projection or visual observing with a filter, and those using video equipment all from the same site. We are still collecting data, and do not know yet if we have all of the techniques covered. Some of the planned observations were not made, due to equipment failures, etc. One thing that did work quite well was the WWV reception. All observers in the schoolyard who made audio recordings have them well time-tagged whether or not that was their intention, as there were a number of radios set up around the site.

One thing that was a little sad was to see the effect on the local inhabitants of the "eclipse scare" tactics designed to protect people from eye damage. There were the usual hysterical and overblown pronouncements on the dangers of observing the Sun, including statements that it was better to watch it on TV than step outdoors and look at it. This is not unique to Mexico or to this eclipse -- hyping the dangers of eclipse observing is apparently an American invention. Few Salulitas inhabitants observed the eclipse and not many were out and about either before or after.

The next eclipse in an annular, observable next January 5 at sunset from Los Angeles. We know of an expedition to observe that eclipse going to Truk Island. The next total is on June 30, 1992, with its only landfall in Uruguay at Sunrise. The next eclipse we plan to observe is that annular crossing the USA in May 1994. This will occur during the Texas Star Party, and 200n observers are expected to travel from the Davis Ranch to the Texas panhandle. The next total we want to observe will be in November 1994, crossing Peru, Chile, Bolivian, Paraguay, and Brazil. (The eclipses in 1993 are all partials.)

Astronomy and Personal Computers

Joan Bixby Dunham

We were having a discussion at the office about providing someone a computer for a month or two for a short term project. I wondered how much there was to fuss about, so I spent an evening browsing Computer Shopper. (If you are not familiar with this magazine, it is certainly the largest computer monthly, and one of the largest of all monthlies. The July 91 issue I bought was 820 pages, and the pages are 10 x 13. It has articles, but no one buys it for that. It is where to go for direct mail ads for PC products.)

I looked for the prices for either a 16 or 20 Mhz 386SX or a 25 Mhz 386DX with 4 MB memory, 5-1/4 drive, 3-1/2 drive, 80 MB hard drive, and VGA I didn't check for the printer and modem ports, or the keyboard -- I assume those come as well. I didn't check for resolution quality of the VGA, although a lot of the ads did give that information. For the 386SX, the lowest prices were about $1700, with some asking $1500 with a 40MB hard drive. There were, of course, many asking more, but a decent system can be had for $1800. For the 386DX, The low price was $1700, with a number asking $200-$300 more. A decent 386DX can be yours for about $2000. Then, the next Monday, I opened the Washington Post business section, and found similar prices. None of these prices include taxes, and shipping may not be included on the mail order prices. But, one need not go mail order to get these prices. The next time we discussed this at the office we agreed that, at those prices, equipment rental is foolish.

I compared listings in the Computer Shopper with a Byte Magazine of last December. There were a few 386DX systems that were comparable being advertised by the same company in both magazines. The prices had dropped in every case, some by $500 or more. In some cases, the prices went down a few hundred dollars, but what was offered was more valuable.

My company now buys clone computers instead of name brands for MS-DOS machines. We are comfortable enough with these computers so that we do not need the assurance of a name brand. Also, I think the "no names" are better made than in the past. Other companies have done the same, part of the reason why some of the major computer manufacturers have reduced their prices. This may be a good time to buy a computer if one like I priced suits your need. It also is a tough time to be a computer retailer. (But some think this is a bad time to buy a computer. Wait another six months they say, and see how much lower the prices are then.)

I noticed few ads there for PC XT's. I found 6. A 12MHz XT with 640K memory can be bought for under $200 ($260 with a monitor and 360K drive). I can see that at some point in the future, parts for an XT will hard to get.

So why don't we all run out and replace our computers? For one thing, while these prices are astonishing in comparison with prices two and three years ago, that is still a lot of money for most of us. And some of us may be waiting to see how low prices can really go.

In Memorial

Mabel Sterns, long time active member of and a founder of National Capital Astronomers, died July 14. Mabel, a technical writer by profession, often drew upon her professional skills to make many contribution to the field of astronomy. Among these were volunteer service to the United States Naval Observatory in which she edited and collated photographs, prepared a directory of Astronomical Observatories in the United States, and compiled a history of amateur astronomy in the United States, In 1945 she founded **Star Dust** and served as editor for five years. She was the first treasurer of the Astronomical League.

Goodbye Mabel. We will miss you.

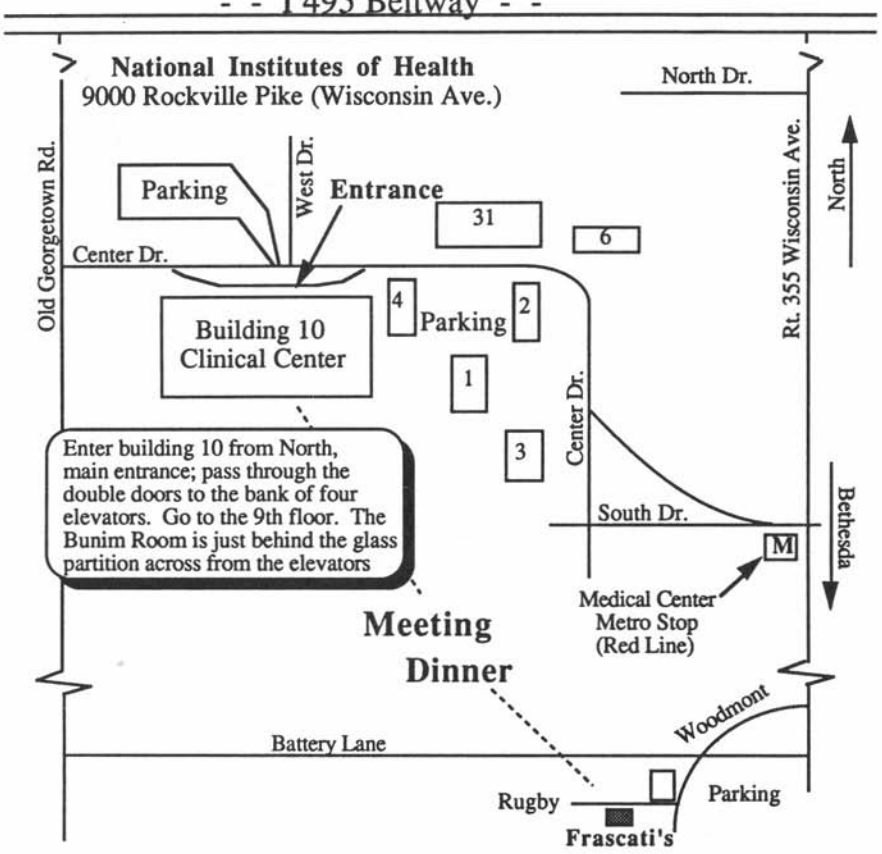
At the June meeting, the trustees and leadership of N.C.A. presented Bob McCracken with a plaque in appreciation for his generous 35 years of service to the organization.

N.C.A. Annual Treasurers Report

Jeffrey Norman

1) General Fund			
Income			
Dues			7449.00
Interest			255.70
Sale of *Observer's Handbook*			325.00
Telescope-making Classes			818.00
Miscellaneous Income			37.00
Total Income			8884.70
Expenses			
Insurance			328.00
International Dark Sky Association dues			200.00
Purchase of *Observer's Handbooks*			323.75
Sky and Telescope Subscriptions			3734.00
Star Dust	Editing and Publishing	1395.00	
	Postage	717.94	
	Total		2113.05
Telephone			358.13
Miscellaneous Administrative Costs			326.19
Total Expenses			7383.12
Excess Income over Expenses			1501.58
Balance - July 1, 1990			4581.04
Balance - June 30, 1991			**6082.62**
2) N.C.A. Travel			
Balance - July 1, 1990			1892.22
Interest - Fiscal 1991			100.82
Balance - June 30, 1991			1993.04
General Fund Balance			6082.62
3) Total N.C.A. Balance			**8075.66**

Getting to the September NCA Monthly Meeting



•Subway Riders - From the Medical Center Metro: Walk down the hill, pass the bus stops and turn right at the anchor (onto Center Dr.). Continue uphill to building 10, the largest building on campus.

•To Frascati's: Proceed down Wisconsin Ave. toward Bethesda bear right onto Woodmont (or the next right onto Battery La.), follow Woodmont across Battery, take a right onto Rugby and park The restaurant will not guarantee seats after 5:30.

National Capital Astronomers, Inc.

is a non-profit, public-service corporation for advancement of the astronomical sciences and is the astronomy affiliate of the Washington Academy of Sciences. For information, call NCA: (301) 320-3621.

SERVICES AND ACTIVITIES:

A Forum for dissemination of the status and results of current work by scientists at the horizons of their fields is provided through the monthly NCA Meeting. (See monthly ***Stardust*** for time and location.) All interested persons are welcome; there is no charge.

Expeditions frequently go to many parts of the world to acquire observational data from occultations and eclipses which contribute significantly to refinement of orbital parameters, the coordinate system, navigation tables and timekeeping. Other results of this work under continuing study include the discovery of apparent satellites of some asteroids, discovery of apparent small variations in the solar radius, and profiles of asteroids.

Discussion Groups provide opportunities for participants to exchange information, ideas, and questions on preselected topics, moderated by a member or guest expert.

Publications received by members include ***Sky & Telescope*** magazine and the monthly publication of NCA, ***StarDust***.

The NCA Public Information Service answers many astronomy-related questions, provides predictions of the paths and times of eclipses and occultations, schedules of expeditions and resulting data, assistance in developing programs, and locating references.

The Telescope Selection, Use, and Care Seminar, held annually in November, offers the public guidance for those contemplating the acquisition of a first telescope, and dispels the many common misconceptions which often leads to disappointment.

Working Groups support areas such as computer science and software, photographic materials and techniques, instrumentation, and others.

Telescope-Making Classes teach the student to grind and polish, by hand, the precise optical surface that becomes the heart of a fine astronomical telescope.

NCA Travel offers occasional tours, local and world-wide, to observatories, laboratories, and other points of interest. NCA sponsored tours for comet Halley to many parts of the southern hemisphere.

Discounts are available to members on many publications and other astronomical items.

Public Programs are offered jointly with the National Park Service, the Smithsonian Institution, the U.S. Naval Observatory, and others.

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If family membership, list names of additional participating immediate family members in same household, with birthdates of all those under 18 years old: _____

Note: If you already subscribe to ***Sky & Telescope***, please attach a recent mail label, or indicate the expiration date: _____. A prorated adjustment will be made. Make check payable to National Capital Astronomers, Inc., and send with this form to:
Leith Holloway 10500 Rockville Pike Apmt. M-10, Rockville, MD 20852.

The following information is optional. Please indicate briefly any special interests, skills, vocation, education, experience, or other qualifications which you might contribute to NCA
Thank you, and welcome!

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