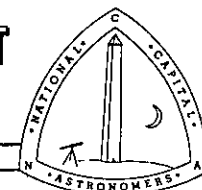


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★ STAR DUST



July, August, September 1964 Vol. XXII, No. 1

CELESTIAL SCANDAL

Whoever hangs the stars at night
And takes them in by day
Must need a million filing clerks
To get them put away.

Sometimes a clerk must lose his job
And know the reason why,
If a star has not been properly
Fastened to the sky;

For what a scandal there would be
If one of them should dare
To place Orion's belt and sword
In Cassiopeia's chair.

Elva R. Ray.

"GALAXIES"



To open the 1964-1965 Lecture Series for NCA, Dr. Whiting R. Willauer will talk about Galaxies, on Saturday, September 12, 1964. Dr. Willauer is at present a post doctoral research fellow at Georgetown University in the field of Astronomy. He received his bachelors and masters degrees from Princeton in the field of Aeronautical Engineering and his Ph.D. from Georgetown University in the field of Astronomy.

During the Korean War Dr. Willauer served with the Civil Air Transport in the Far East. On returning to Washington, he worked with Analytic Services in long range development planning.

He serves as a consultant for the National Geographic Society, and designed the orrery which is a part of the permanent exhibit at the headquarters of the society. At the present time his work is with the analysis of the spectrum of Titanium, the development of Georgetown Observatory Infrared Scanner and studies of extra galactic nebulae.

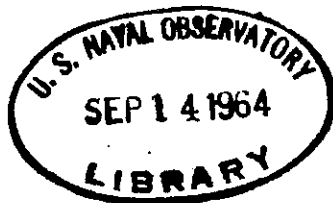
CALENDAR FOR SEPTEMBER

- 12 Galaxies by Dr. Whiting R. Willauer in the Dept. of Commerce Auditorium at 8:15 P.M. Business meeting follows.
- 12 JUNIOR GENERAL MEETING in Room 2628 in the Dept. of Commerce. (See Junior report.)
- 13 EXPLORING AND PHOTOGRAPHING THE SKY - Bring your telescope or join the group for observing at 8 P.M. at Fort Reno Park, 40th and Chesapeake Streets, N.W.
- 15, 22, 29 TELESCOPE MAKING CLASS at the Chevy Chase Community Center with Hoy Walls at 7:30 P.M.

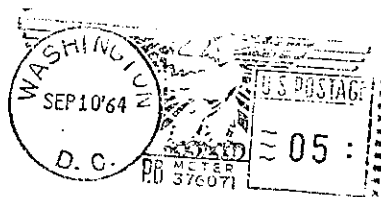
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Published monthly except August by and for members of the National Astronomers' Club, Inc., a nonprofit public service corporation, devoted to the promotion of interest and education in astronomy and the related sciences. President, Mrs. John Stolarik, RE 6-4321; Vice President, Mrs. Margaret K. Noble, Secretary, Theodore T. Noble, Treasurer, Arthur D. Etienne, Trustees, Sam C. Field, Jr., G. Robert Wright, James J. Krebs, and Robert H. McCracken, Editor, Mrs. John Stolarik. Assistant Editor, Isabel Fine. Distribution, Morton Schiff. Photography and Production, Sam C. Field, Jr. Deadline: Tenth of preceding month.

★ S T A R D U S T
WASHINGTON, D.C.



Library,
Naval Observatory
Washington 25, D.C.



CALENDAR FOR SEPTEMBER continued -

- 18 PRINCE GEORGE'S COUNTY JUNIORS - Making plans for junior activities. For details phone John Stott, 736-2787.
- 18, 25 ADVANCED TELESCOPE MAKING CLASS at the Chevy Chase Community Center with Hoy Walls at 7:30 P.M. (see report)
- 19 DISCUSSION GROUP "What's Your Astronomical I.Q.?" lead by Bob Wright. Room 2062 in the Dept. of Commerce at 8:15 P.M.
- 19 MD.-D.C. JUNIORS MEETING at 2:00 P.M. in the Silver Spring Public Library. Dr. James K. Krebs will talk on "Amateur Radio Astronomy." For details phone Mr. Leith Holloway at 362-1961.

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WILLIAM LIPSCOMB, JR.

The officers and members of the National Capital Astronomers wish to express their sympathy to Mrs. Betty Lipscomb on the recent death of her husband, William Lipscomb, Jr. Bill was for many years an active member of NCA, and served two terms as Treasurer. He was currently serving the Middle-East Region as Treasurer for a second term. His guidance in NCA affairs has helped to make the organization successful.

* * * * *

NORFOLK, JUNE 25-28, 1964.

NCA members attending the Middle East Region Astronomical League Convention agree that conventions are informative as well as fun. NCA had the largest number of members of any society attending the convention, even more than the host society, Norfolk. Ideas for meetings, such as holding a members' night; organized classes for astronomy; Junior societies' activities, such as concurrent sessions at League Conventions; publicity through radio and TV are just a few of the topics presented. Very interesting trips were taken to Langley Air Force Base to see simulated moon landings and Causey Observatory, Norfolk Astronomical Society's efficient observatory and a trip to Chesapeake Schools Planetarium. NCA member, Mr. Morton Schiff gave an excellent paper on "Astronomy in the Bible". Be sure to hear further details of the convention at the NCA business meeting, September 12, 1964.

--- Margaret Noble

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TIDBITS OF NEWS FOR NCA

1. A friend has offered to print our membership directory for 1964-1965 for cost of paper only, no labor costs. This will be a great saving for NCA plus it will be an attractive booklet. The members can expedite the work by paying dues before the October 2 meeting. The current year's membership will be in order for the printer and our directory ready on time. Please cooperate by paying your dues before October 2.
2. Up-date your address and phone number with the treasurer. Is your name, address and phone number correct in the current directory? Phone Mr. Cornelius at 560-1393.
3. A name tag will be waiting for you at each monthly meeting, beginning September 12, 1964. It will be nice to refer to fellow members by name. Be sure to return your name tag before you leave the auditorium.
4. NCA needs some volunteer help for committee work. Offer your services, and you'll be given an interesting chore! Put your name and phone number on a card and give it to the Secretary, Ted Noble. Thanks!
5. A star gazing picnic for October - - - details at the October meeting.
6. A textbook course in astronomy for NCA members only! The professor will be Mr. John Stolarik of Goddard Space Flight Center. More details at the September meeting. Plan to join the class.

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PAY YOUR DUES

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SEE YOU AT THE MEETING SATURDAY

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MD.-D.C. JUNIORS continued -

attend, and vote at this meeting as well as at the regular business meeting after the lecture.

About a dozen sample articles of the proposed weekly elementary astronomy series have been written as of press time. Writing the articles are Ro Merritt, Steve Camp, Bob Holland, Henry Shapiro, and Norm Sperling; mimeographing publicity is Harry Barnes. All area news media are being asked to announce our Junior lectures, and publicity notices are being distributed to all area Junior and Senior High Schools. It is hoped that this will increase our attendance and membership. Increased attendance will enable us to get even better lecturers, and a larger membership will add to the club treasury and enable it to do more.

We are currently in communication with a Pennsylvania Junior interested in helping form a Junior Astronomy League, and the Rhode Island Meteor Research Organization on observing meteor showers. Several Md.-D.C. Juniors observed on the nights of August 10 - 14 and submitted their data.

A paper by Norm Sperling on Md.-D.C. Junior activities was presented at the Middle East Regional Convention on June 27. It detailed the program that Md.-D.C. has followed this past year and outlined our projects for the coming one.

Norm Sperling
MD.-D.C. Junior Editor.

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SEPTEMBER DISCUSSION GROUP

This discussion group will introduce you to some of the fascinating areas of astronomy and give you an idea of your own talents. Save September 19, Saturday at 8:15 P.M., and join the informal group especially designed for NCA members. You will get to know the members too. COME!

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A LETTER FROM THE TRUSTEES

During the past several years, the annual income of your organization has gradually decreased while, during the same interval, general operating expenses have increased. During the 1962-63 season your elected Trustees, responsible for and ever conscious of the financial affairs of the NCA, undertook an extensive review of all organizational operations, expenses, and incomes in an effort to improve the financial base of the Corporation. As a result of this effort, annual dues were increased slightly and major adjustments to operating procedures and methods were instituted which materially reduced operating expenses. All these matters were reported and extensively discussed at several sessions of the monthly general business meeting, where the entire membership was given an opportunity to voice its opinions and preferences in these and all related areas of concern, prior to any final action by the Trustees.

Among the several means of cost reduction considered by your Trustees was the method of production and distribution of your monthly house organ, STAR DUST. A change in format, which resulted in a lower monthly publication cost, was devised and implemented. At the same time a thorough review of postal regulations governing the mailing of such material, by an organization such as ours, was undertaken. In several letters to the office of the Postmaster General our problem, our organization, our objectives, and requests for assistance were extensively detailed. There are several classes of mailing available to us which could result in further cost reductions. It was clearly established, however, that the best compromise -- considering all the various factors involved such as the time required each month for the preparation of material for the printer; the importance of each member receiving his copy of STAR DUST prior to meeting date, etc. -- was a first class mailing. At the direction of your Board of Trustees, your elected officers have accordingly modified the production and mailing procedures for STAR DUST to effect the maximum practical reduction in cost. They will continue to monitor this and other cost matters; when opportunities develop, such as changes in postal regulations, for example, they will be duly considered and appropriate action will be taken. Until that time, it is considered that a satisfactory solution to our immediate problem has been obtained and the matter is closed.

Your Board of Trustees and other elected corporate officials are charged by law, via our Constitution and By-Laws, with certain responsibilities in the management of all affairs of the National Capital Astronomers, Incorporated. Among these responsibilities is all official communication with external organizations, regardless of their nature or function -- astronomical, parliamentary, judicial... or postal. Ample opportunity is afforded each member, Senior or Junior, during the course of each monthly business meeting, for the expression of individual ideas and desires, and these are appropriately considered by your officers in the normal administration of corporate affairs. It is stressed, however, that where outside consultation or

- continued on Page 4

A LETTER FROM THE TRUSTEES continued --

guidance is required by NCA officers in the execution of their duties it will be obtained through normal and proper channels and procedures; the spurious and misguided probings of individual members into external regulatory and/or legal agencies, however well intentioned only increases the difficulty of the proper, official administration of corporate affairs. BRING YOUR PROBLEMS TO MEETINGS . . . YOUR ELECTED OFFICIALS CAN HANDLE THINGS FROM THERE ON.

* * * * *

MEET NCA OFFICERS



Margaret K. Noble

The new president of NCA is Mrs. Margaret K. Noble. Mrs. Noble is a graduate of Wilson Teachers College, and has a Masters Degree from George Washington University. She has been the Director of the D.C. Public School Planetarium at Cardozo High School since it was installed in 1960. Lecturer for American University in "Elementary School Science for Teachers" and lecturer for D.C. Teachers College in "Astronomy and Space Science for Teachers". She and her son Ted are members of the NCA Maksutov Telescope Club with their Maksutov nearing completion. Her hobbies are astronomy, photography, and china painting. She has served as NCA Education Committee Chairman and Vice President 1963-64.

Frederick Cornelius is the new treasurer for NCA. Mr. Cornelius received his higher education at Rutgers University and the University of Buffalo, N.Y., graduating from the latter with a degree in geology in 1950. After completing a year of graduate work in geology at Buffalo, he joined the staff of the Federal Power Commission in 1951. His work at the FPC related mainly to natural gas reserves and availability, and gas pipeline rate matters. In 1951, he joined the Washington consulting engineering firm of Martin Toscan Bennett Associates, Inc., where he was concerned with oil and gas reserves and deliverability, reservoir engineering,

- continued on Page 5



Frederick Cornelius

JUNE LECTURE - - - NATIONAL SCIENCE FOUNDATION AND THE SCIENCES

Knowledge in the physical sciences doubles every ten years. So stated our June speaker, Dr. Marjorie Williams, of the National Science Foundation. The U.S. Government contributes substantially to this burgeoning growth of scientific information. Of the sixteen billion dollars spent in this country each year on research and development, two thirds is provided by the federal government. Seventy per cent of this money goes into development, 20% to applied research, and 10% to basic research.

Most of the government's money is spent through its giant agencies; namely, the Department of Defense, N.A.S.A., A.E.C., and N.I.H. The National Science Foundation, a smaller agency created under the Executive Branch in 1950, fills in the gaps in scientific support. Its annual budget is now over \$350,000,000.

Keeping pace with the increased interest in astronomy in recent years, N.S.F. has stepped up its aid to this branch of science. Through the office of the Astronomy Section, N.S.F. finances the construction of whole observatories such as the Kitt Peak and the National Radio Astronomy observatories, moves university observatories from urban campuses to more favorable sites, sponsors astronomical research projects, sends astronomers to international scientific meetings, pays tuition for astronomy students and so forth. N.S.F. is truly a great friend of astronomy and of all the sciences.

- Leith Holloway

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MD.-D.C. JUNIORS

Dr. James J. Krebs of the Naval Research Laboratory will speak to the Md.-D.C. Juniors on September, 19, inaugurating the second year of the current lecture series. His talk, "Amateur Radio Astronomy" will deal with the problems involved in design and construction of a small radio telescope. All Juniors, from all regions, are urged to attend this lecture. Our new hall is the large meeting room of the Silver Spring Public Library on Colesville Road in the center of Silver Spring. It is less than one block from the Sheraton Motor Inn and centrally located to the region.

About thirty Md.-D.C. Juniors attended the August first picnic in Rock Creek Park. Organized by Henry Shapiro, it was a social success. As the observing session was clouded out, the Juniors went to Ft. Reno Park, where Mr. McCracken was showing several prints of Ranger VII photos to the Exploring the Sky audience.

Immediately preceeding the NCA lecture on September 12, the Junior Division will hold its first meeting of the new year. As much is to be discussed, it is important that all Juniors come early,

- continued on Page 10

TELESCOPE MAKING CLASSES continued -

The advanced class will also be glad to cooperate and make its facilities available in connection with any other optical problem of an astronomical nature.

The advanced class is open to all persons who have previously made a telescope, including the optics, and who have a reasonable knowledge of telescope design and construction.

Hoy Walls
Director of Telescope Making

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NOTICE FROM SKY AND TELESCOPE

You have received a notice from Sky and Telescope, this is NOT a bill. DO NOT send any money to them, instead pay your dues to NCA and Sky and Telescope will be taken care of by our Treasurer.

The subscription cost of Sky and Telescope has gone up this year, therefore it has been necessary for us to raise our dues.

Current NCA dues rates are:

Regular Membership	\$7.50	Junior	\$1.75
Joint	\$9.50	Junior (with Sky)	5.75

Dues payments should be sent to:

Frederick Cornelius
618 Washington Avenue,
Arlington, Virginia.

Send in your dues now, and we will have the directory out early.

* * * * *

THE VICE PRESIDENT

The following letter has been received by the Trustees. Regretfully they accept this resignation and will appoint a new Vice President to fill the 1964-65 term.

Dear Friends,

May 14, 1964

I was deeply honored when you elected me Vice President of our organization.

Since it is not possible for me to meet the obligations of the position, I herewith tender my resignation. This I do with real regret. To do the job properly, I must have a car. Since I have none, I must yield to someone who has.

Thanks to all who voted for me. Sincerely yours,
Forton Schiff.

MEET NCA OFFICERS continued -

pipeline design, and various utility rate and service matters. Last June Mr. Cornelius rejoined the staff of the Federal Power Commission, as Assistant Chief of the gas pipeline division. In addition to the NCA, he is a member of the Four Corners (Arizona, Utah, Colorado, and New Mexico) Geological Society, and the Gem and Lapidary Society of Washington, D. C.



Theodore T. Noble

Beginning a second term as NCA Secretary is Theodore T. Noble, known as Ted. He has attended University of North Carolina at Chapel Hill and is presently enrolled in C.I.T.--formerly C.R.E.I. He is a member of the Tau Alpha Pi honor fraternity and is part time instructor at the school. He is the adult sponsor for the lively Prince George's County Juniors, organized in 1963. Ted is TN, not only his initials, but a genuine "telescope nut", having ground 6" mirror, 4" for a richest field and the hard work on a 6" Maksutov. He advocates more NCA members being "TN", of course, under one of NCA's telescope instructors.

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JUNIOR BIOGRAPHIES

TRAVIS TAYLOR, newly elected president and former vice president of the Junior Division, was an NCA science fair winner in 1962 with his project on the phases of the moon. Travis is seventeen years old, 6 feet 3 inches tall, and a junior at Wakefield High School in Arlington where he is on the debating team. He plays the guitar and participates in hootenannies at school. During his presidency Travis promises to attend meetings of all three regions of the Junior Division.



Travis Taylor

Retiring after two years service as secretary-treasurer of the Junior Division is ELLIE MATTER, who won NCA membership in 1961 with her science fair exhibit. She is a sophomore at Washington Lee High

- continued on Page 6

JUNIOR BIOGRAPHIES continued -

School in Arlington and owns a 6-inch Edmonds reflecting telescope. At the recent National Science Fair in Baltimore, Ellie won first prize for girls in the combined astronomy, physics, and math and computers division, finishing among the top 13 winners in this competition with her science project entitled "Composition, Structure, and Origin of Jupiter". Ellie plays tennis in her spare time.

STEVE CAMP, the Junior Division's new secretary-treasurer, joined the NCA in October, 1963. He was born in Dayton, Ohio, on September 22, 1948, and had been a junior member of the Miami Valley Astronomical Society there for several years before moving to this area. Steve attends Suitland High School, where he is on the debating team, a member of the Chess and Spanish clubs, and works on the school newspaper. Besides astronomy his hobbies include photography, geology, paleontology, chemistry, and science in general.

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FINANCIAL STATEMENT AS OF JULY 31, 1964.

INCOME

Dues	\$1251.54	
Telescope class	364.50	
Observers Handbook	51.00	
Graphic Timetable	4.20	
Emblems	4.50	
Pr. Geo. Co. Jrs.	<u>53.00</u>	
	\$1728.74	
Balance from 1962-63	<u>411.61</u>	
	\$2140.35	\$2140.35

EXPENDITURES

Treasurer	\$ 99.42	
Publicity	125.66	
Star Dust	320.54	
Monthly Meetings	133.51	
Juniors	59.60	
Sky & Telescope	582.25	
Misc.	325.15	
Memorial to Children's Hosp.- Aug. '64	<u>10.00</u>	
	\$1646.13	- \$1646.13
Balance		\$ 494.22

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The Telescope Making Classes will open again in September. The Beginning Class to start on September 15, and the Advanced Class on September 18.

The Advanced Telescope Making Class, which was started about two years ago, has completed the optics for seven 6" Maksutov-Cassegrain Telescopes. Three sets of optics are in various stages of completion. Five telescopes have been completed and are in use; two are about 75% completed. Their performance has been from good to excellent. Those in the "good" category can and will be made "excellent" by a slight "retouching" of the optical surfaces which is normally required. The optical design was by Robert G. Hires. Persons making telescopes in the class were Bob Bolster, E. J. Johnson, Jim Krebs, Margaret and Ted Noble, Richard LeClery, Ernest McDaniel, L.K. McMullen, Jerome Schnall, Hoy Walls, and Henry Wilson. Johnny Mitchell assisted in this operation by constructing a spherometer and test template and by repairing the grinding machine. John Stolarik was quite helpful in obtaining, on a loan basis, a fine 10" flat for testing the optics. One 8" and two 10" optical flats were made by Henry Wilson and Bob Bolster.

It is proposed to continue the making of optics for the 6" Maksutov Cassegrain Telescopes. Designs by Mr. Hires are available in the f/18 design previously used and in an f/20 version. While glass will not be stocked for this size it can be obtained on short notice. The makers of the glass have raised their prices and the cost to class members for the glass, abrasives, etc., will be between \$40 and \$45.

The 6" design is considered by some to be too heavy and bulky for a really convenient portable telescope. It is proposed to make available to class members a 5" version which will be much lighter and less bulky than the 6". The size of the telescope tube will be 6 inches in diameter and 12 or 14 inches long. The weight will be about half that of the 6" design. Laps, spherometers and micrometers will be available for making two versions of the 5", one a scaled down version of Mr. Hires 6" c. a. f/20 design, the other an f/12 design, that has been ray traced and found to be quite good. The focal lengths of these two designs will be 75 inches and 60 inches respectively. Glass for this size is in stock and the cost of the complete "kit" will be about \$35.

Since Mr. R. R. Wiley, Jr.'s two articles in the April, 1962 issue of Sky and Telescope pointed out the superior performance of the Schmidt Cassegrain type of telescope there has been considerable interest in this design. While it is somewhat harder to build than the Maksutov Cassegrain, the cost of the glass for the correcting lens is much less. Two 12" Schmidt Cassegrain Telescopes are now being made by NCA members with a possibility of one of the 12"ers being changed to a 16", if the builder can sell his partially completed f/4 12" mirror and tool. Anyone wishing to purchase this uncompleted mirror, please let me know. While the making of optics for this type of telescope has not been made a class project, such will be done if there is sufficient demand. -continued on Page 8