

**JUNIOR DIVISION NEWS**

The Junior Division held its January meeting January 7, 1967 at 7:00 in the Interior Department. We discussed the idea of having a contest concerning the Messier Club, but it was voted down. We also discussed having an astro-photo contest. The Junior Division voted to have a contest on an individual basis if MD-DC rejected the idea of both individual and regional competition. The purpose of a photo contest is to get some good photos for a display at the convention. All Juniors are urged to do anything they can to help out with the convention.

- Sheila Duck, Sec.Treas.  
Junior Division

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**NOTICE**

Any information that you wish to have included in Stardust should be sent to: Ellen Stolarik by the tenth of the month.

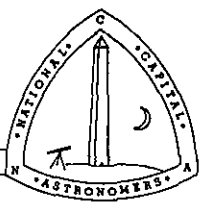
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**SPECIAL THANKS**

Starting with the January issue of STARDUST, the photographic reproduction work has been taken over by Mike Jewel. All NCA members who like STARDUST in its present form, thank Mike for taking over this work. Also, we owe special thanks to Sam Feild who has done this work for many years.

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★ **STAR DUST**



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**THE TRANSIT CIRCLE**

At the February meeting, Dr. B. L. Klock will present a program on the past, present, and future of the transit circle. Featured also will be colored slides of some of the recent European instruments of this kind. Dr. Klock is the Technical Assistant Director of the Six-Inch Transit Circle Division of the U. S. Naval Observatory.

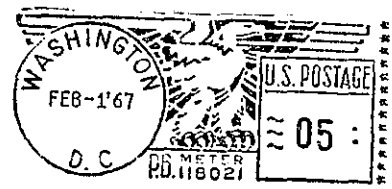
Currently Dr. Klock is engaged in an instrumentation program to modernize the Naval Observatory's transit circles. Dr. Klock received his B.A. (1956) and M.S. (1960) from Cornell University. He joined the staff of the Naval Observatory in 1960. Through participation in the Observatory's professional development program he received a Ph. D. from Georgetown University in 1964.

Dr. Klock's professional associations include the American Astronomical Society and the Instrument Society of America.

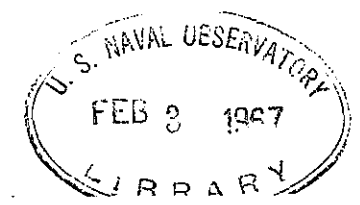
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**CALENDAR**

- FEBRUARY 4 DINNER WITH THE SPEAKER at 6:15 P.M. For further information please call Mr. Anderson at Gl 6-6324.
- 4 LECTURE-MEETING at 8:15 P.M. -- Dr. B. L. Klock will speak on TRANSIT CIRCLES in the Department of Interior Auditorium (D.St. between 18th and 19th Sts. N.W.) Business meeting after the lecture.
- 4 GENERAL MEETING OF THE JUNIOR DIVISION at 7:15 P.M. in the Dept. of Interior Auditorium. All Juniors urged to attend.
- 10 OBSERVING AT THE 5-INCH on the grounds of the U. S. Naval Observatory with Larry White from 8:30 to 10:00 P.M.
- 18 DISCUSSION GROUP, 8:15 -Room 2062 Commerce Department. ASTROPHOTOGRAPHY.
- 11 MD-DC JUNIORS MEETING at 2:00 P.M. at the Chevy Chase Library 8005 Connecticut Av., Chevy Chase. Dr. Jim Krebs will speak on radio astronomy.
- 3,10,17,24 TELESCOPE MAKING CLASS with Hoy Walls at the Chevy Chase Community Center from 7:30 to 10:00 P.M.
- 3,17 TELESCOPE MAKING CLASS with Grady Whitney at McLean High School, McLean Virginia at 8:30 P.M.
- 1,8,15,22 TELESCOPE MAKING CLASS with Bill Isherwood at Bladensburg High School, Bladensburg, Maryland. 7:30 to 10:00 P.M.



Library,  
Naval Observatory  
Washington 25, D.C.



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## ASTRONOMICAL LEAGUE MESSIER CLUB

The League has announced the formation of a Messier Club and will present a certificate to those observing seventy Messier objects. Who will be the first NCA member to join the club? Bob Wright will show one of the framed certificates at the February meeting. Be sure to see it. Further details will be in the next issue of the Reflector.

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## HAVE YOU REGISTERED FOR THE CONVENTION?

The 1967 Astronomical League Convention will be held right here in Washington over the July 4 weekend. Registration for NCA has now reached about forty out of a membership of two hundred fifty. We should have about one hundred early registrations. The first publicity releases have been sent to the League Societies, and registrations are starting to come in from them. If you have not registered yet, you may do so at the February meeting.

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## PAPERS AND EXHIBITS

Do you have a paper or exhibit for the convention? If you have a paper that you would like to present at the Convention, please call Bob Wright at 384-6748. If you have an exhibit contact Jim Krebs at 582-8695 or Hoy Walls at OL 2-5395. Dr. Krebs is in charge of all convention exhibits and Mr. Walls is in charge of NCA exhibits.

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## ASTRONOMY COURSE

The Prince George's County Board of Education is presenting an Adult Education course in Astronomy at the Materials Center. More information can be obtained by calling the Supervisor of Adult Education at 627-4800.

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## THE SEARCH FOR THE TUNGUSKA METEORITE

On February 1 at 8:00 P.M. in the Museum of Natural History Auditorium the Smithsonian Institution will present a free film entitled "The Search for the Tunguska Meteorite." The film deals with the mysterious 1908 cosmic phenomenon in Siberia which was finally solved after the fall of a meteorite about forty years later in another part of Russia. The introduction will be presented by Eugene Jarosewich, Chemist, Smithsonian Division of Meteorites.

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## NEW MEMBERS

Applications for membership were received from the following people at the January 7 meeting:

REGULAR	JUNIOR
John S. Korintus 2632 Cory Terrace Wheaton, Md. 20902	Ines Cifventes 10225 Kensington Pkwy. Kensington, Md. 20795
Harlan H. Rainey 2939 Van Ness St. #219 Washington, D. C. 20008	Kerry Kingham 4908 Bristow Drive Annandale, Virginia 22003

## JANUARY LECTURE - COLOR PHOTOGRAPHY OF ASTRONOMICAL OBJECTS

Until as recently as only a decade ago color film was too slow to be used for astrophotography. Our January speaker, Dr. V. M. Blanco of the U. S. Naval Observatory, explained the problems encountered in color astrophotography and described his work in this field.

In addition to low film speeds reciprocity failure plagues attempts to photograph the night sky in color. For exposure times shorter than one second used in taking ordinary snapshots, the strength of the latent image produced on any photographic film is roughly proportional to light exposure computed as the product of light intensity and time. However, at low light levels the time of exposure must be increased at a faster rate than the light intensity decreases. In other words, a given exposure (intensity times time) produces a weaker image in dim light than in ordinary daylight illumination. This problem is compounded in color photography by the fact that each of the three color emulsions have different degrees of this so-called reciprocity failure, the red having the worst failure and blue, the least. This upsets the color balance of color photographs taken in dim light with the result that most celestial color pictures look too blue. Dim stars invariably appear blue regardless of their true color.

One solution to reciprocity failure is to use filters to correct for the slow speed of the red emulsion in respect to that of the green and blue emulsions. However, this reduces the overall film speed and, furthermore, color balance is true only in a narrow range of light intensities. This was the technique used for taking the Palomar color slides which have been widely circulated.

Another and better solution to this problem is to cool the color film down to about minus 80 degrees Centigrade at which temperature thermal motion tending to destroy the latent image is greatly reduced. This procedure practically eliminates reciprocity failure and along with special developing techniques increases film speed by a factor of 24. This is the method used by the Naval Observatory at Flagstaff, Arizona in obtaining the beautiful color slides of nebulae and galaxies which Dr. Blanco showed to the N.C.A. Some of the dim stars appear red in his pictures and the spiral arms of galaxies appear blue whereas the nucleus is red.

On Dr. Blanco's photograph of the Andromeda galaxy the stellar nucleus appears so bright that if the Milky Way's nucleus were as bright and not masked by interstellar dust, it would shine at the fourth magnitude at our distance. Nevertheless, it has not been found although astronomers have searched for it down to the 22nd magnitude. The mystery is that if our galaxy does have such a starry nucleus, where does the 18 magnitudes of absorption come from when only two magnitudes of attenuation have been detected to within 6,000 light years of the galactic center.

- Leith Holloway

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## DISCUSSION GROUP

What has happened to the discussion group? This season's attendance at this activity has reached a new low--less than six members present. Always the same few. What is wrong? Are we too busy? Are the topics uninteresting? The question of whether we should continue this activity will be brought up at the February meeting. Constructive criticism and comments are invited from all.