

COMMITTEE REPORTS

NOVA SEARCH, Chairman: Carmine V. Borzelli
12 Corbin Avenue
Jersey City, NJ 07306

While no nova was discovered this year, observations and number of observers continued to reach all time highs. There were 5,322 observations submitted by 29 observers. Six observers made 12 monthly reports and two observers made 11 monthly reports. A few scares were received but these were due to discrepancies in the star atlas used.

During the observing year, the chairman visited several amateur astronomers' associations in the New York, Philadelphia and Atlantic City areas, speaking on variable stars and nova-search. During the trip to see the October 23rd eclipse in Australia, he will speak to the New South Wales section of the B.A.A. in Sydney, the Astronomical Society of Victoria in Melbourne, and the Hawaiian Astronomical Society in Honolulu. The two former societies have long been contributors to the AAVSO Nova-search program.

Again, there were no super-nova discoveries by the observing program, but four observers submitted 116 observations of 16 galaxies. Forms for visual and photographic SNS are now available from the chairman. He also recommends that Vehrenburg's "Atlas of Deep Sky Splendors" be used as a reference along with the Hubble-Sandage "Atlas of Galaxies". Observing charts are available for NGC objects 4144, 5055 and 5233. A scare of a possible super-nova in NGC 3556 was received in December. Although no super-nova was reported for this galaxy, it has been regularly observed since.

Although a record number of observations has been made in both programs, more observers are needed for full coverage of search-areas and program galaxies. Further information is available from the chairman.

Nova Search Reports:

<u>Observer</u>	<u>Location</u>	<u>Affiliation</u>	<u>Areas</u>	<u>Observations</u>
A.Barrett	Australia	BAA/ASV	1	32
C.Borzelli	New Jersey	AAVSO/BAA	80	1776
T.Brelstaff	England	BAA	4	188
R.Callus	Netherlands	BAA	6	29
D.Costanzo	Virginia	AAVSO	11	46
W.Dillon	Virginia	AAVSO	5	62
M.Durkefalden	West Germany	AAVSO	141	1447
A.Ference	Pennsylvania	AAVSO	1	12
D.Fraser	Australia	BAA/ASV	1	59
P.Garnavich	Maryland	AAVSO	3	27
L.Hiett	Virginia	AAVSO	5	60
R.Hill	North Carolina	AAVSO	19	115
C.Howard	New Jersey	AAVSO	5	45
R.Hunter	Ohio	AAVSO	5	45
G.Kelley	Virginia	AAVSO	1	12
D.Levy	Canada	AAVSO	5	168
H.Luft	New York	AAVSO	1	36
R.Luoma	New York	AAVSO	3	9
P.Martin	Australia	BAA/NSW	2	10
J.McFadden	N. Ireland	AAVSO	1	1
J.Mogchinski	New Jersey	AAVSO	1	1
D.Robbins	Massachusetts	AAVSO	4	22
I.Robinson	Australia	BAA/NSW	2	24
T.Sarna	Michigan	AAVSO	2	7
J.Scholl	New York	AAVSO	11	223
C.Sullivan	Virginia	AAVSO	1	22
J.Trainor	Australia	BAA/ASV	2	411
F.Traynor	Australia	BAA/NSW	2	32
T.Wilson	West Virginia	AAVSO	6	401

Super-Nova Search Reports:

<u>Observer</u>	<u>Location</u>	<u>Affiliation</u>	<u>Areas</u>	<u>Observations</u>
C. Borzelli	New Jersey	AAVSO/BAA	4	32
R. Godden	England	BAA	12	68
C. Howard	New Jersey	AAVSO	1	4
T. Wilson	West Virginia	AAVSO	3	12
				<u>116</u>

This report will appear in a future issue of the BAA Journal.

PHOTOELECTRIC PHOTOMETRY, Chairman: Howard J. Landis
2395 Wood Hill Lane
East Point, GA 30344

In the past year the Committee has received eight requests for information, both observational and instrumental. Six were from the U.S.A. and two were from Germany. Two of those from the U.S.A. have developed into regular correspondents with the chairman.

The chairman of the Eclipsing Binary Committee, Mr. Marvin Baldwin, has suggested a list of five stars that need to be observed photoelectrically. They are of small magnitude range and one, according to Mr. Baldwin has had no new data published on it since 1922.

It is with a great feeling of appreciation on my part that a professional astronomer, Dr. Douglas S. Hall, has taken an active interest in the development of the Photoelectric Photometry Committee. He has written descriptive articles on three specific observing projects that concern astrophysical problems facing professional astronomers. This serves as strong encouragement for us to get out and make more photoelectric observations.

Your inquiries into this interesting activity are welcome.

CHART DISTRIBUTION, AAVSO Headquarters

Between 10/1/75 and 9/30/76 a total of 426 orders was filled, including 124 sets for new observers.

8 x 10 charts	15,186
Finder charts	203
Atlases	32

NEW CHART COMPILATION, Chairman: Clinton B. Ford
10 Canterbury Lane
Wilton, CT 06897

Since May, 1976 the following mailings of AAVSO preliminary chart copies have been made from the Secretary's office. Most mailings have been the result of requests from observers:

U.S.A.	10 observers	1,428 copies
Other countries	7 "	1,271 "
	<u>17</u>	<u>2,699</u>

As in previous reports, a more detailed breakdown of these figures is available, if desired. A total of four complete sets of the preliminary charts was mailed during the past six months.

The total number of variables previously uncharted in AAVSO format, but now covered by issues of new or revised charts since the publication of the June 1974 Catalog of Preliminary Charts, now stands at 63. As before, the backlog of usable material (photographs, sketches, magnitude sequence data) continues to increase. Work is progressing toward completion of a revised and up-dated Catalog for the preliminary charts. In this new catalog the format will be changed to show separate listing for charts listed as preliminary in 1974 but which are now finalized and available from AAVSO headquarters.

The cooperative project for revising southern hemisphere charts, as described in my last two reports, continues to be delayed until final agreements are concluded with Mr. Bateson of the RASNZ.

CLASSICAL CEPHEID, Chairman: Thomas A. Cragg
 Anglo Australian Observatory
 P. O. Box 377
 Coonabarabran, N.S.W, 2857, Australia

The Classical Cepheid program continues, two papers having been published showing mostly light curves and O - C values for selected stars observed by AAVSO members during two 1000-day intervals. Another such 1000-day interval has ended recently and I wish to request that observations made between JD 2442000 and JD 2443000 be sent to the chairman as soon as possible at the above new address.

Observations currently at hand covering this 1000-day period appear to have fallen off drastically. This must be due to the long delay in preparing the last report and to infrequent correspondence with the observers. If the material is received soon, a much shorter delay in publishing is anticipated.

Unfortunately most of the material from which details for such a report are derived is still in transit to the chairman with his belongings being shipped from the United States.

The chairman's new location has increased the interest in adding a number of far southern stars to the list. It is hoped to recruit some southern observers into the program as this part of it materializes. A few of those cepheids already available by virtue of being on existing RASNZ charts are currently being observed by the chairman. Charts for a number of others will be available reasonably soon.

The Director will continue to be advised on the progress of the whole program and her suggestions will be sought. It is also hoped that cooperation with Frank Bateson and the RASNZ will be forthcoming. Such is being currently negotiated.

OCCULTATIONS, Chairman: George Fortier
 63 Devon Road
 Baie D'Urfe, Quebec H9X2W7, Canada

In the past year a total of 30 occultations has been reported to the Committee. In the period from May, 1976 to date only two occultations were reported.

The observers were R.Crabbs, O.Matzek, G.Kelley, C.Holton, and G. Fortier. In addition five requests for information were answered.

In view of the generally low level of interest and activity in this area that has been demonstrated by AAVSO members, it is recommended that this Committee be disbanded. The existence of the organization IOTA (International Occultation Timing Association), which commands a large and active membership, and which devotes its activities exclusively to this field of interest, would seem more suitable. (See Letters to the Editor.)

VARIABLE STAR ATLAS

ADVISORY COMMITTEE, Chairman: Clinton B. Ford

As of this date, the status of the AAVSO Variable Star Atlas project is as follows:

1. Charts nos. 1 thru 101: Fully completed, now being checked at Headquarters.
2. Charts nos. 102 thru 119: Completed, now in hands of Henry Specht or in mail to him, for checking. These are the regions in Decl. -8° to -28° and RA 0^{h} to 17^{h} .
3. Charts nos. 120 thru 123: Completed, ready to send to Henry Specht for checking. This is the heavily populated Sagittarius thru Capricornus region.
4. Balance of charts (nos. 124 thru 178, all in southern hemisphere): Master chart blanks assembled and drafted, showing numbered coordinates but no variable star data.

Financial support of Mr. Scovil's work in producing the basic charts for the VSA will terminate on March 1, 1977. If that work is not completed by that date, the Committee will be obliged to ask Mr. Scovil to complete the work on a voluntary basis.

ECLIPSING BINARY, Chairman: Marvin E. Baldwin
 R. R. # 1
 Butlerville, IN 47223

During the past year 30 observers submitted nearly 12,000 observations in the process of timing 794 minima of 154 eclipsing binary stars. Useable data received for 19 additional stars may eventually lead to determination of times of minima for some of them. Observers have shown remarkable restraint in avoiding concentration on easy-to-observe stars to expend their efforts on those most in need of attention.

For the first time we have two observers who contributed significant observations but cannot be credited with the timing of a minimum. These observers are Edwin Friton and Phil Kirby, who participated in the observation of one branch of an eclipse of Theta¹ Orionis A. Others participating in that project were W. Farrar, D. Overbeek, and G. Samolyk. Both Farrar and Samolyk reported this star in eclipse just before dawn on the morning of August 23rd confirming our contention that the period is only one-third as long as previously believed.

The outstanding success of the eclipsing binary program during the past 12 months is largely due to the persistence and skill of several individuals who put in long hours timing minima of the most important stars. Among the most significant efforts were those of G. Samolyk (201 minima), D. Ruokonen (117), G. Wedemeyer (64), C. Hesseltine (45), P. Atwood (29), and W. Farrar (24). The first four are all members of the Milwaukee Astronomical Society. A large vote of thanks goes to Ed Halbach, past president of that society, who discovered their talents and encouraged their participation in the program. David Skillman, the fourth PEP observer to participate in our program this year, recently submitted a detailed report of observations of U Sge to give a boost to a significant and growing part of our program.

Minima were timed for all but six of the 91 program stars listed in the 1976 ephemeris. These six are UZ Dra, SS Lib, BO Mon, AQ Peg, AC Tau, and AG Vir. Four of those were added to the program in January. Program stars to be added to the ephemeris in January, 1977, include V343 Aql, ZZ Boo, UU Cma, CG Cyg, V346 Cyg, V387 Cyg, and V505 Sgr.

One important aspect of observers' special efforts this year includes the fact that a number of stars were observed that have been neglected for many years. The Polish ephemeris, Rocznik Astronomiczny Obserwatorium Krakowskiego, International Supplement, 1976, known to many simply as "the Rocznik", lists the year that a few neglected stars were last observed. We succeeded in timing minima of eight of these. They are SS Boo (1915), V346 Cyg (1959), V387 Cyg (1945), DK Hya (1945), VZ Leo (1944 - also observed this year by the BBSAG), RZ Oph (1957), V423 Oph (1945), and CC Ser (1944). Other stars from the Rocznik listing are being observed at random times and may yield normal times of minima when the data are examined. Negative results were obtained on some stars either because minima were too shallow for visual work, because the ephemerides may be in error, or for other reasons.

The backlog of old data continues to be processed at a satisfactory pace. A list of 240 minima, comprising essentially all of the 1973 data, appears elsewhere in this issue. We hope that some form of computer processing will come to our aid before we bog down in the large volume of data from the last two years and fall far behind again.

All the foregoing accomplishments, significant as they may be, are overshadowed by the most important development of this past year. Ed Halbach, with the assistance of members of the Milwaukee Astronomical Society and in accordance with guidelines generated by himself, as modified and approved by a special committee convened solely for that purpose at the St. Louis Meeting, has generated some 380 high quality preliminary eclipsing binary charts in the AAVSO format. Although visual sequences for many of these charts remain to be established and/or verified, this monumental research and drafting effort spells the end to many years of struggling with inadequate charts and sketches. Effective immediately Mr. Halbach's associate Gary J. Wedemeyer, will handle chart distribution for the eclipsing binary program from his home, 2971 S. 52nd Street, Milwaukee, WI 53219. An interim catalog and rates are available from Mr. Halbach. Those ordering charts are cautioned

that although they are in a standard AAVSO format, these charts are preliminary pending final verification and are subject to revision.

In connection with this development we wish to recognize the long and faithful service of Leonard Kalish who has handled chart reproduction and distribution since the program's infancy. Beginning in 1969, he has distributed some 21000 charts and sketches to AAVSO observers everywhere, enabling the program to function.

RR LYRAE, Chairman: Marvin E. Baldwin

Four observers, T. Cragg, H. Smith, E. Underhay, and your RR Lyrae chairman, produced more than 3000 observations in the process of timing approximately 200 maxima of 28 stars during the past year. Stars observed are the same as those listed in J.A.A.V.S.O. 4, 110, with the exception that SW Aqr, CY Aqr, and TV Leo are not included, and UU Hya has been added. A study is in progress to determine the most useful format for publication of the data we have collected on these stars during the past several years.

TELESCOPE LOANS, Chairman: Charles E. Scovil
Stamford Observatory
Stamford Museum
Stamford, Conn. 06903

In addition to activities reported in the previous issue of the Journal, the 3 3/16-inch Fitz refractor has been sold for \$500 to Norman Sperling. Mr. Sperling has done a great deal of research into the life of Henry Fitz, making this a most appropriate disposition of this telescope.

This leaves the 4 1/2-inch Fitz refractor available [since sold] and also a 4-inch equatorially mounted brass-tube refractor of unknown manufacture.

The 8-inch Fernald Springfield-mounted reflector is available for loan. The present borrower, Chandler Holton, has reported on cost estimates for crating it, and I have an inquiry for possible loan to a member in the Chicago area.

All other telescopes remain as previously reported.

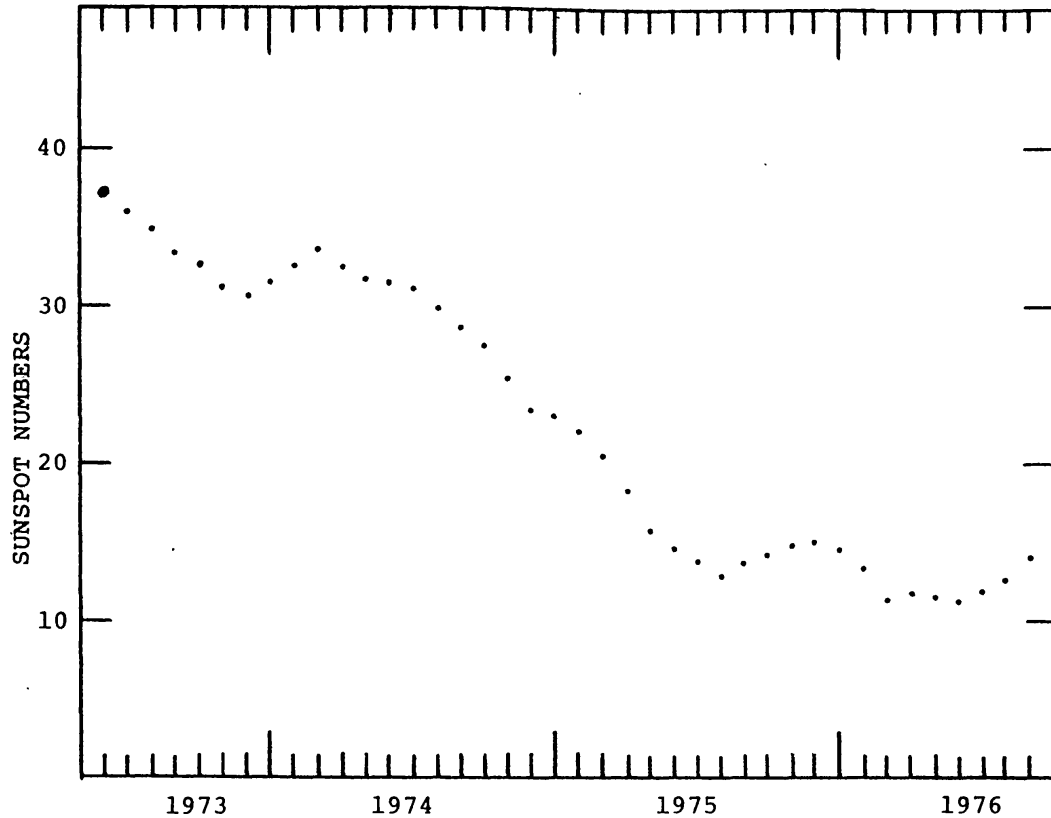
SOLAR DIVISION, Chairman: Casper H. Hossfield
119-B Second Street
Mahwah, NJ 07430

The activity of the AAVSO Solar Division has been relatively slow, due to the minimum in the solar cycle.

Robert Ammons continues to do a very fine job of analyzing the charts of the indirect flare patrol group. This group has grown under his efforts. We usually receive reports from about thirteen individuals, including one from England and one from Tasmania, which gives us worldwide coverage.

The accompanying graph shows the smoothed monthly means of the American sunspot numbers obtained from the AAVSO solar observers. There is an indication of an upward trend in the solar activity starting from July, 1976. If this upward trend is real, then Spring of 1976 would mark the sunspot minimum and a beginning of solar cycle number 21.

The activities of the AAVSO Solar Division are supported by a grant from the National Oceanographic and Atmospheric Administration.



Smoothed monthly means of the American sunspot numbers show an upward trend for the last four months of the above graph. If this trend continues it would place sunspot minimum in the spring of 1976. There is no assurance, however, that the upward trend will continue any more than a similar upward trend for the last five months of 1975 which the graph also shows. Even as far back as the beginning of 1974 there was a four-month stretch of increasing smoothed means. Judging from smoothed means alone it would be risky to conclude that sunspot cycle 20 is finished and we have begun cycle 21.