

29th

ANNUAL REPORT OF THE DIRECTOR OF THE AAVSO
FOR THE YEAR ENDING SEPTEMBER 30, 1960

It is a great pleasure for me, as Director of the AAVSO, to present this Annual Report of the work of the Association for the fiscal year 1959-1960.

FINANCES. Thanks to our grant from the National Science Foundation, we have had funds to take care of our basic office expenses. In addition, we received a grant from the Bache Fund of the National Academy of Sciences to cover the cost of publishing two Quarterly Reports. The National Science Foundation and the National Bureau of Standards have been very generous in their financial support of our Solar Division and their excellent SEA work.

Our Endowment Fund continues to show remarkable growth, as you have heard from the Chairman of the Endowment Fund Committee. We should all feel much pride in the fact that in 6 years we have managed to rebuild our Fund to the \$100,000 mark.

We have continued to add to the Fund from the sale of new books ordered through our office. Most publishing houses will bill us with a dealer's discount and ship the book directly to the purchaser. We have been particularly pleased that to date, we have handled 7 orders for the Photographic Lunar Atlas.

Two Mail Auctions were held in which we advertised books that were duplicates in our library. The combined auctions listed 66 books, 39 of which were sold, bringing in over \$200 for the Fund. The remaining books are being offered for sale at this annual meeting. We plan a third Mail Auction before the end of this year. The sales serve the dual purpose of adding to the Endowment Fund and releasing much needed shelf space for our new additions to the Library.

REQUESTS FOR INFORMATION. During the year we received 678 requests for information concerning astronomy and the work of the AAVSO. Many of these were from children, and we sent them some mimeographed information sheets. About 240 of them had telescopes and sounded as though they were potential observers, so we sent them copies of the Instruction Manual. Many of our new applications for membership came in as a result of this mailing.

MEMBERSHIP. Our membership continues to grow. In October 1959 we elected 15 new annual members, and in May 1960 we elected 36 more. Our mailing list, which includes some non-member foreign observers and exchanges, now numbers about 725.

The Association has suffered a severe loss by the death of the following members during the year, most of whom were active observers and members for many years: Francis W. Collins (life member since 1932), Mrs. Rosina Dafter (1920), Bernhard Dawson (charter member, 1917), Alice Farnsworth (life, 1921), Samuel A. Mitchell (honorary, 1919), George Nolte (charter, 1915), Patrick O. Parker (1938), and Milford Wall (1950).

SUBSCRIPTIONS TO PUBLICATIONS. We have subscriptions to our publications from 27 observatories and libraries. Mount Wilson & Palomar Observatories subscribe to our Special Service in addition to the regular publications. We have been very pleased to answer a number of their requests for information and light curves necessary to some of their research problems.

SPECIAL CONTRIBUTIONS FROM MEMBERS. Many gifts of time are received from our members and friends, as well as books for the library, and financial help. All members

of committees deserve much praise and thanks for their fine work.

We are always delighted to have visits from our members and friends, and especially so when they stop in to do some work for us! In August we had a very nice visit from Curtis Anderson of Minneapolis. He spent several days in the office and helped out on some of our work. Wayne Lowder of Pelham, New York, spent a weekend working in the AAVSO library looking up the identification of some of the faint U Geminorum stars, and other faint variables he wants to add to his observing program.

Mrs. Phoebe Haas has continued her work of taking 10-day means of the observations made by the members of the Variable Star Section of the Royal Astronomical Society of New Zealand. They are a valuable supplement to our observations when we form mean light curves and determine dates of maxima and minima. Observations made by the Japan Study Association are also used for the mean curves.

Mr. Axel V. Nielsen of the Ole Romer Observatory of Aarhus, Denmark, continues to send us a pre-publication list of the observations of SS Cygni made by the Scandinavian observers. These observations are a valuable addition to our observations, when we compile the mean curve of SS Cygni, published each year.

Monsieur Antoine Brun of France sent us a set of his charts for the U Geminorum-type variables. He also told us the sad news that the French observers are no longer active. They suffered great losses during the war, and interest has not been revived.

LIBRARY. During the year, the Charles Y. McAteer Library has received 30 books and 513 other publications, reprints, pamphlets, etc. Sig. Lacchini of Italy sent us a copy of the new edition of his *Atlante Celeste*, and also a copy of his new *Spettroscopico E Galattico* atlas, which shows spectral types and nearest half magnitude for all stars down to 7.5, on the scale of 100mm per degree.

Curtis Anderson very kindly gave us a copy of the beautiful Larousse Encyclopedia of Astronomy -- a valuable addition to the Library.

PUBLICATIONS. Quarterly Report 24 was published, which contains results of about 48,000 observations made by 141 observers of 803 variables, during the 400-day interval from June 10, 1957 through July 14, 1958. The work of Quarterly 25 is progressing, and we hope to have it completed within the next few months. It will bring observations up to August 1959.

Bulletins published during the year are: No. 20, the 1960 Annual Predictions of Maxima and Minima of Long Period Variables; No. 21, BiMonthly Predictions of Variable Stars, by Walter Scott Houston, and including a list of stars needing observations; and No. 22, Observed Dates of Maxima and Minima of SS Aurigae, a compilation of data on all maxima of the star from 1907 to 1959.

Two issues of AAVSO Abstracts, were published. They contained abstracts of papers presented at the October 1959 and May 1960 meetings. We also published two issues of Book Reviews, the Annual Report of the Director, and the Treasurer's and Endowment Fund Reports.

Publications of the Solar Division are mentioned in Mr. Bondy's report. The Amateur Scientist column in the September 1960 Scientific American featured the work of the Solar Division in the detection of solar flares with the equipment designed by David Warsaw.

Variable Star Notes were published in each issue of the Journal of the Royal Astronomical Society of Canada. These Notes include reports of observations made by the Nova Search Division. Various papers by our observers have appeared in Sky and Telescope magazine and the Publications of the Astronomical Society of the Pacific.

ANNUAL SUMMARY OF OBSERVATIONS. During the year 1959-60 we received reports from 234 observers, the largest number reporting in the history of the Association. The next highest number was not the 184 of last year, but 217 in 1935! The cause of the two peaks proved to be quite a coincidence. In December 1934, Nova DQ Herculis, a 1st magnitude nova was discovered, and in March 1960, another Nova Herculis, 3rd magnitude, was discovered. And everybody likes to observe a nova.

We received 58,791 individual observations from the 234 observers in 1,002 reports, an average of about 84 reports per month. In addition to the regular observations, flare stars were observed for a total of 14 hours 13 minutes.

Ninety-two observers from 18 countries outside the United States made over 27,000 observations, about 46% of the total. The rest of the observations were made by 142 observers in 34 states. Tables I and II give the breakdown by country and state.

TABLE I - COUNTRIES

Country	No. Observers	Total Obs.	Country	No. Observers	Total Obs.
Argentina	5	936	Japan	2	1631
Australia	20	4146	Mexico	3	1211
Brazil	5	746	New Zealand	1	68
Canada	7	617	Peru	2	29
Chile	23	5432	South Africa	5	7416
Cook Islands	1	5	So. Rhodesia	1	358
France	1	19	Sweden	1	120
Germany	8	2596	Taiwan	1	363
Hungary	5	115	U.S.A.	142	31772
Italy	1	1211			
			total	234	58791

TABLE II - UNITED STATES

Arizona	3	501	Massachusetts	5	69	Ohio	9	1598
California	12	4803	Michigan	5	629	Oklahoma	2	19
Connecticut	4	1844	Minnesota	1	1419	Oregon	2	44
Florida	4	630	Mississippi	1	47	Pennsylvania	5	118
Georgia	1	316	Missouri	2	2045	South Carolina	1	17
Illinois	7	650	Montana	1	302	Tennessee	1	16
Indiana	4	788	Nevada	1	64	Texas	7	478
Iowa	1	25	New Hampshire	1	89	Virginia	1	85
Kansas	1	43	New Jersey	6	249	Washington	1	55
Louisiana	1	33	New Mexico	3	271	West Virginia	1	1
Maine	2	4779	New York	25	7162	Wisconsin	19	2412
Maryland	2	11						
						total	142	31772

Table III lists the observers in order of number of observations for the year. Once again Reginald de Kock is in first place with 5,824 observations, followed by Cyrus Fernald with 4,721. Third place is held by one of our newer observers, Rodrigo de la Vega of Santiago de Chile, with 4,096. He is followed very closely by Edward Oravec with 3,874.

The letter S following the number of observations in Table III, indicates that the observer is an "Inner Sanctum" member, that is, he has observed stars of magnitude 13.8 or fainter. Thirty-one observers made that select group during the year.

TABLE III - AAVSO OBSERVERS

1959 - 1960

1	Reginald de Kock, So. Africa	5824 S	37	*Charles McPherson, Montana	302
2	*Cyrus Fernald, Maine	4721 S		*plus 30m V Sge	
	*plus 12m V Sge		38	*Donald Engelkemeir, Illinois	290
3	Rodrigo de la Vega, Chile	4096		*plus 7h33m PEP V Sge, AD Leo,	
4	Edward Oravec, New York	3874		51°24'02"	
5	Thomas Cragg, California	3138 S	39	Allen Montague, Illinois	290
6	*Robert Adams, Missouri	2044 S	40	Francis Morgan, Canada	282
	*plus 1h 30m V Sge		41	Wayne Lowder, New York	265 S
7	D.W. Orchiston, Australia	2024	42	Robert Price, Australia	265
8	Ferdinand Hartmann, New York	1750	43	Leopoldo Celis, Chile	264
9	Tatsuo Yamada, Japan	1623 S	44	*Frank Kelly, Florida	261
10	Curtis Anderson, Minnesota	1419		*plus 25m V Sge, AE Aqr	
11	G.D. Lacchini, Italy	1211 S	45	Tom McFarland, Wisconsin	260 S
12	Werner Braune, Germany	1189 S	46	Wolfgang Quester, Germany	246
13	Charles Giffen, Wisconsin	1164 S	47	F. Traynor, Australia	245
14	Leslie Peltier, Ohio	1045 S	48	Luiz Muniz B., Brazil	238
15	Leif Robinson, California	1012 S	49	Marcos Severin, Argentina	235
16	David Rosebrugh, Connecticut	990	50	Norman Godfrey, Texas	230
17	Domingo Taboada, Mexico	956 S	51	Patrick Rizzo, New York	230
18	L.L. van Zyl, S. Africa	786	52	Robert Miller, Florida	223 S
19	Clinton Ford, Connecticut	746 S	53	Paulo Mourilhe, Brazil	208
20	*James Berg, Indiana	739	54	James Dreckinridge, Ohio	201 S
	*plus 25m AE Aqr		55	Jair Barroso, Brazil	199
21	Paul Evans, Australia	650	56	Peter Smits, So. Africa	188
22	Carlos Segers, Argentina	599	57	Hector Ayala R., Mexico	180
23	Paul Ahnert, Germany	566	58	O.M. Erpenstein, California	175 S
24	Reinhard Rudolph, Germany	525 S	59	*M. Lattey, Canada	174
25	Michiel Overbeek, So. Africa	523 S		*plus 40m V Sge	
26	C.J. Renner, Michigan	522 S	60	Dan Judd, New Mexico	162 S
27	Craycroft Wilson, New York	512 S	61	William Miller, New Jersey	160
28	Kenneth Fuller, Arizona	508	62	A.R. Ball, Wisconsin	144
29	Ralph Buckstaff, Wisconsin	468 S	63	A.P. Sharpless, Florida	144 S
30	Arturo Martinez, Chile	430	64	Peter Williamson, Australia	136
31	Chang-Hsien Tsai, Taiwan	363	65	Howard Nightingale, Australia	131
32	Richard Stanton, California	359 S	66	Pedro Borquez, Chile	130
33	R.H. Bicknell, So. Rhodesia	358	67	*Russell Smith, Texas	130 S
34	R.C. Shinkfield, Australia	327		*plus 1h 10m V Sge	
35	Robert Brady, Georgia	316	68	Gunnar Darsenius, Sweden	120
36	Jeremy Knowles, New York	304	69	Donald Humphrey, Australia	110

continued

70	Carolyn Hurless, Ohio	107	S	121	D.A. Sherwood, Canada	30
71	Roger Grossenbacher, Ohio	106		122	Claude Carpenter, California	29
72	Walter Kaminski, Wisconsin	103		123	William Glenn, New York	28
73	James Robinson, New Mexico	103	S	124	Philip Seldon, New York	26
74	Tomas Balassa, Chile	100		125	Ray Berg, Indiana	25
75	S.C. Venter, So. Africa	95		126	Victor Blunck, Iowa	25
76	Koppany Thaly, Hungary	92		127	Florence Glenn, New York	25
77	Carl Anderson, New Hampshire	89		128	Erasmus Solar, Chile	25
78	Raymond Dudley, California	87		129	G. Vodrazka, Australia	25
79	Lansing Hicks, Connecticut	87		130	John Lynch, Texas	24
80	Lancaster Hiatt, Virginia	85		131	John Ries, Wisconsin	24
81	L.J. Williamson, Australia	84		132	Jay Frogel, New York	23
82	George Diedrich, Ohio	79		133	Ronaldo Mourao, Brazil	23
83	Oliveiros Tavares, Brazil	78		134	Jerome Walsh, Wisconsin	23
84	Julio de la Riva, Chile	76		135	Gustavo Estremadoyro, Peru	22
85	Art Gonthier, Mexico	75		136	Christine Rosenfield, Michigan	22
86	*Orin Kindt, Wisconsin *plus 15m V Sge	73		137	Leonard Solomon, Massachusetts	22
87	Van Wilson, Arizona	70		138	Anthony Hull, Connecticut	21
88	Jerome Wyckoff, New Jersey	70		139	Donald Bradley, New York	21
89	Albert Jones, New Zealand	68		140	Patricio Rettig, Chile	21
90	Bernhard Dawson, Argentina	68	S	141	Gabriel Garland, Chile	20
91	Roger Kopp, Michigan	67		142	Angel Meynet, Argentina	19
92	Maria Teran, Chile	66		143	Alphonse Oberstatter, France	19
93	Tom Constanten, Nevada	64		144	Ximena de la Vega, Chile	18
94	Edward Anderson, Pennsylvania	63		145	Robert Percy, Indiana	18
95	Edward Halbach, Wisconsin	61	S	146	James Carlisle, So. Carolina	17
96	Margaret Olmsted, Maine	58		147	Jaime Guerrero, Chile	17
97	R.R. Staer, Australia	56		148	James Ellerbe, Tennessee	16
98	Morgan Thomas, Washington	55		149	Maria Ormazabal, Chile	16
99	Herbert Beidler, Illinois	54		150	Donald Rosenfield, Michigan	16
100	Miguel Valdez, Chile	51		151	Jack Crotty, Wisconsin	15
101	Robert Allin, Canada	49		152	Antonino Mannuccia, Argentina	15
102	I.P. Debono, Australia	49		153	Ulrich Langenbeck, Germany	14
103	Keith Axelson, California	47		154	Csaba Szekely, Hungary	13
104	Nona Ledbetter, Mississippi	47		155	Jerome Hudson, Texas	12
105	Pedro Carbacho, Chile	44		156	Diane Lucas, Ohio	12
106	Walter Houston, Kansas	43		157	Stephen Maran, New York	12
107	Rainer Mende, Germany	43		158	G. Topp, Australia	12
108	Stephen Durt, Massachusetts	42		159	Wallace Byrd, Oklahoma	11
109	James Templeton, Texas	42		160	Robert James, Wisconsin	11
110	*Norman Hutchings, Canada *plus 1h 15m V Sge	41		161	F.J. Brinley, Maryland	10
111	Douglas Bash, Wisconsin	39		162	George Lovi, New Jersey	10
112	Robert Sealy, Oregon	39		163	Dennis Matthies, Wisconsin	9
113	Arthur Pearlmutter, New York	39		164	Adrian McWilliams, Australia	9
114	*D.M. Fletcher, Pennsylvania *plus 13m V Sge	38		165	Ronald Royer, California	9
115	DeLorne Diedrich, Ohio	37		166	Jane Byrd, Oklahoma	8
116	Gordon Smith, Canada	36		167	J. Flavin, Australia	8
117	Robert Farmer, Texas	35		168	Philip Peters, California	8
118	Stephen Schiff, Louisiana	33		169	Toshimi Takeuchi, Japan	8
119	Francis Price, New York	31		170	Richard Tompkins, Pennsylvania	8
120	Santiago Barrera, Chile	30		171	Stephen Bieda, California	7
				172	Victor Estremadoyro, Peru	7
				173	Peter Lehmann, Germany	7
				174	Waldo Molina, Chile	7

continued

175	*Frank Welker, Illinois	7	205	Dario Riquelme, Chile	3
	*plus 5m V Sge		206	Richard Skhal, Arizona	3
176	J.H.Conklin, Pennsylvania	6	207	Roy Anderson, Florida	2
177	George Glagola, Ohio	6	208	Lajos Bartha, Hungary	2
178	J.G. Goodsell, California	6	209	Robert Covell, New York	2
179	David Halvorson, New Jersey	6	210	J. Fejes, Hungary	2
180	Lajos Hegyi, Hungary	6	211	E.Harries-Harris, Australia	2
181	F. Lewindon, Australia	6	212	Abelardo Ibanes, Chile	2
182	Cornelia Newton, California	6	213	Oswaldo Lagos, Chile	2
183	Charles Ricker, New Mexico	6	214	Robert Loblay, Australia	2
184	Vincent Thurn, Germany	6	215	Margaret Mayall, Massachusetts	2
185	Alan Van Til, Indiana	6	216	Dean McLaughlin, Michigan	2
186	Richard Wend, Wisconsin	6	217	Robert Rosalsky, New Jersey	2
187	Frank Dateson, Cook Islands	5	218	Chris Schell, Massachusetts	2
188	Robert Brown, Texas	5	219	Stephan Yakish, Wisconsin	2
189	Ali Dueck, Chile	5	220	David Anderson, Illinois	1
190	Tim Hunter, Illinois	5	221	Anthony Buckley, Australia	1
191	Dan Leithoff, Oregon	5	222	Jane Burden, New York	1
192	William Quigley, Ohio	5	223	Frederick Fallon, Maryland	1
193	Manuel Schilling, Chile	5	224	Edwin Friton, Missouri	1
194	Leslie Sheldon, Canada	5	225	Jerome Kunicki, Wisconsin	1
195	Dale Brechlin, Wisconsin	4	226	Daniel Mahoney, New York	1
196	Fernando Campillo, Chile	4	227	Elizabeth Socha, New York	1
197	John Graham, Australia	4	228	Key Martin, New York	1
198	Elfrieda Knowles, New York	4	229	David Meisel, West Virginia	1
199	Karl Wells, New York	4	230	Roger Morrison, New Jersey	1
200	Francis Wilford, Wisconsin	4	231	David Stowe, Wisconsin	1
201	John Drilling, Illinois	3	232	Stephen Ungar, New York	1
202	Jane Douglas, New York	3	233	Scott Wickett, Massachusetts	1
203	M. Eckman, Pennsylvania	3	234	Irving Williams, New York	1
204	Joseph Kammel, New York	3			

The following 19 observers sent their reports in each month: Adams, Anderson, Cragg, Diedrich, Engelkemeir, Fernald, Hartmann, Kelly, Knowles, McPherson, Miller, Montague, Oravec, Peltier, Rizzo, Robinson, Rosebrugh, Stanton, and Yamada. Twelve others missed only one or two months. Some of these, especially ones from a distance, had good intentions, but their reports were delayed in the mails, and appear in our records as of the following month.

SPECIAL PROGRAMS. We always try to emphasize the need of greater accuracy in our observations, especially for the rapidly varying stars. Donald Engelkemeir has been very successful in observing with his photoelectric photometer. His observations were a great help when we were having trouble with some erroneous magnitudes of comparison stars of Nova Herculis. Charles Giffen has done some excellent research on observing with filters. You will hear more of this in his paper to be read later today.

Leif Robinson has set up a very interesting program on the variables in the Orion Nebula, and has enlisted several observers to work on it with him.

Thomas Cragg was instrumental in getting a good photoelectric sequence for Nova Herculis 1960, from the 5th to 17th magnitude. He has also set up sequences for a number of U Geminorum, R Coronae Borealis, and other peculiar variables. We hope

the charts will be ready for distribution very soon.

Dr. Sarah Lippincott, of Sproul Observatory has recently sent me a set of identification prints of the brighter flare stars, many with comparison star magnitudes. We hope to have tracings made for blueprints before long, and enable more of our observers to join a special program on flare stars. The Smithsonian Astrophysical Observatory has asked us to have our members join a cooperative study of the flare star UV Ceti. Dr. Lovell is beginning a series of observations of the star with the 250-foot radio telescope at Jodrell Bank, and would like visual observations as well as the Smithsonian Baker-Nunn photographs made at the same time.

OTHER ACTIVITIES. I would like to propose a vote of thanks to the Chairmen of all AAVSO committees. They are all doing fine work in handling the increased activity in their fields, and enthusiastically give much of their time and effort.

Our variable star charts have wide distribution, and many observatories have complete sets in their files. Complete sets were ordered during the year by Kitt Peak Observatory and the National Radio Astronomy Observatory at Green Bank.

Occultation observations are sent to the British Nautical Almanac Office, which acts as a central receiving station for all occultation reports.

The Photoelectric Photometry Committee continues to receive many requests for the PEP Handbook. It is now out of print, and should be revised for a new edition, but that is a very long painstaking job.

The Central Radio Propagation Laboratory of the National Bureau of Standards continues to use the American Sunspot Numbers supplied by our Solar Division. The Indirect Flare Detection program is interestingly described in the Scientific American article mentioned above.

PERSONNEL. It is with the greatest regret, that I have to announce the resignation of our AAVSO assistant, Helen M. Stephansky. She started her work with Leon Campbell, and her knowledge of association affairs has been invaluable. It will be very difficult to find any one to fill in her place.

However, we are fortunate that Mrs. Florence Campbell Dibber will continue to work with us, and we hope before long, to find a qualified third person for the headquarters office.

I want to take this opportunity to thank all of the officers of the AAVSO, and our members and friends for all the help and encouragement they give us.

Respectfully submitted,

MARGARET W. MAYALL
Director, AAVSO