

staff at Sky Publishing Corporation spearheaded by Leif J. Robinson, the Executive Editor of Sky and Telescope magazine.

The VSA is finally completed and published after nearly eight years of work and the expenditure of over \$30,000. After seemingly endless controversy, the retail price of the Atlas has been established at \$39.95 per copy ---- a remarkable achievement considering the amount of work involved and the tremendous amount of information in the Atlas.

As Chairman of the VSA Committee, I would like to ask the AAVSO Council's permission at this time to discontinue the VSA Committee and my responsibilities re same. As a parting remark, I would like to say that my file on the VSA Committee (correspondence, chart samples, photos, reports, etc.) is about four inches thick. The main point, I think, is that the AAVSO Variable Star Atlas is finally a fait accompli, and one of which we may be proud.

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

As previously predicted, there were record numbers of observations in both programs. There were, however, no discoveries. There were a few "minor" scares in both programs which also indicates that our vigilance has also increased.

At the Fall AAVSO workshop in Cambridge, in 1979, supplemental search activities were discussed. For supernova search, Mike Mattei discussed a search pattern from the Sagittarius star cloud to Cassiopeia, which is similar to the Nova search dome search procedure. Its purpose is to discover a supernova within our own Milky Way Galaxy. Such a discovery is long overdue, as the last one was in 1604. The chairman wishes to include reporting of these searches in his future reports. This can be done by indicating on the SNS Long Form, (use of the short forms for both programs has since been discontinued by consensus at this same workshop), SNS Starfield under NGC or Messier No. column. This search should be done with the naked eye down to 3rd magnitude as it would be for a dome search.

In the Nova search program, it was suggested that the variable star fields themselves be used to discover novae. This is how Nova Cygni 1978 was discovered by W. Morrison. While the logistics of trying to report these kinds of observations are probably going to be unwieldy for the nova search chairman, any irregularity in these fields should be reported at once to the AAVSO Director. Also, even though the chairman has discontinued reporting Dome searches, regular observing and reporting of the entire visible sky down to 3rd magnitude should be continued by all observers.

Difficulty with the mail is still being experienced on an increasing scale so that if you have written and received no answer, write again to the chairman and AAVSO Headquarters. During the 1979 Fall Meeting, the chairman distributed approximately 25 sets of supernova star charts prepared by Tom Fetterman to be sky-checked. To date, only 3 reports were received. No decision can be made until further sky-checking is done. Information on this project as well as materials for both programs are available free from the chairman. In addition, program information is available from AAVSO Headquarters.

Nova Search Observations

<u>Observer</u>	<u>Location</u>	<u>Affilia- tion</u>	<u># Areas</u>	<u># Observations</u>
Andrew Barrett	Australia	ASV	5	230
Kenneth Beckmann	Missouri	AAVSO	51	3590
Carmine Borzelli	New Jersey	AAVSO	124	4306
Robert Buss	North Dakota	AAVSO	2	14
Manfred Durkefalden	W. Germany	AAVSO	74	779
Frank Farr	Australia	ASV	1	14
David Levy	Arizona	AAVSO	6	141
Herbert Luft	New York	AAVSO	1	130
Warren Morrison	Canada	AAVSO	14	1212
Frank Schmidt	New York	AAA-NYC	1	9
Chris Spratt	Canada	AAVSO	4	56
Philip Steffey	California	AAVSO	9	53
Frank Traynor	Australia	BAA-NSW	Dome	searches only
Daniel Troiani	Illinois	AAVSO	10	23
Thomas Wilson	W. Virginia	AAVSO	7	<u>532</u>
				11,089

Supernova Search Observations

			<u>#Galaxies</u>	<u>#Observations</u>	<u>(I/S)*</u>
Carmine Borzelli	New Jersey	AAVSO	27	629	
Thomas Fetterman	New Jersey	AAVSO	44	85	(52)
Paul Goodwin	Louisiana	AAVSO	2	2	(2)
Gus Johnson	Maryland	AAVSO	27	110	(7)
Herbert Luft	New York	AAVSO	1	110	
Thomas McFaul	New York	AAVSO	24	35	(35)
Chris Spratt	Canada	AAVSO	4	50	
Daniel Troiani	Illinois	AAVSO	28	57	(4)
Thomas Wilson	W. Virginia	AAVSO	4	<u>9</u>	(8)
				1,087	(108)

* Indicates inner sanctum (mag. 14 or fainter) observation totals.

ECLIPSING BINARY COMMITTEE, Chairman: Marvin E. Baldwin
Route 1
Butlerville, IN 47223

During this reporting period 16 visual observers submitted 7844 observations of 212 eclipsing binary stars. About 420 times of minima will eventually be reduced from these data. An additional 501 PEP observations of six stars were submitted by four observers.

Although the efforts of a few of our observers have enabled us to obtain data for large numbers of stars, the list of program stars which are not adequately observed continued to grow at a distressing rate. During the 1979-1980 observing year no minima were obtained for 24 program stars and only one minimum was obtained for each of a like number of stars.

No minima observed:

TW And	R Cma	SW Cyg	YY Del	VX Lac	SX Oph
RY Aqr	RV Crv	WW Cyg	UZ Dra	SS Lib	EQ Ori
ZZ Boo	V Crt	V387 Cyg	RW Gem	RU Mon	Beta Per
Y Cam	Y Cyg	TT Del	TU Her	BO Mon	AM Tau

One minimum observed:

V342 Aql	XX Cep	CT Her	FL Lyr	AQ Peg	U Sge
V343 Aql	SS Cet	Y Leo	RW Mon	Z Per	V505 Sgr
V346 Aql	U CrB	Delta Lib	FL Ori	ST Per	W Uma
AL Cam	V346 Cyg	EW Lyr	TY Peg	Y Psc	TX Uma

Any qualified observer wishing to make a large positive impact with a small number of minima observations can do so by observing a number of the stars listed here.

A new computerized ephemeris format designed and produced by Peter Taylor and Josefa Manella has been adopted for use by our observers. It is more compact and provides additional information on each star. This ephemeris format replaces the one provided by Don Livingston every year since the late 1960's. Those who were involved in our program at that time will remember well how his computerized ephemerides made possible the major expansion that made the program such a success. We are also pleased to note that Don continues to provide supplemental ephemeral material to a few observers doing special projects and that he retains full capability to provide us with the regular program ephemeris if we should require it.

RR LYRAE COMMITTEE, Chairman: Marvin E. Baldwin
Route 1
Butlerville, IN 47223

This annual report of the activities of the RR Lyrae committee and its observers finds a total of 5 observers reporting 2559 observations of 29 RR Lyrae type stars. A total of some 115 times of maxima will be extracted from these data.

Stars listed in our ephemeris which were not observed include:

SW Aqr	VZ Cnc	TW Her	SS Leo	RZ Lyr
TV Boo	RW Dra	AR Her	TV Leo	AV Peg
RW Cnc	XZ Dra	DL Her	WW Leo	RV Uma

Furthermore, only one maximum was observed for each of these stars -- AT And, TZ Aur, VX Her, SZ Hya, and UU Hya -- and only two maxima for TW Boo and DY Her. All of these stars need more attention by observers.

Observers now have available the new improved ephemeris format provided by Peter Taylor and Josefa Manella replacing the ephemerides produced for several years by Don Livingston which have long been an essential part of the RR program.

Yet another chapter is being unveiled in the unusual history of XZ Cygni. Late in 1979 Peter Taylor had found reason to suspect another major period change in this star. He was able to confirm this period change early in 1980 from our continued accumulation of data.

ANNUAL REPORT OF THE DIRECTOR
FOR FISCAL YEAR 1979 - 1980

It is a privilege for me to present to you my seventh annual report for the fiscal year 1979-1980, a very active, challenging, and fulfilling year.

DATA PROCESSING

The processing of our observations is the key to the management of the data and thus it takes a high priority in our operation. This year, thanks to the grant from Clinton B. Ford for data processing, our current data were keypunched, verified, and processed within a month of receipt. This is a real asset in providing up-to-date data to the astronomical community.

The data between 1966 and 1974, the so-called "gap" data had been keypunched, but not completely verified or processed, and in the past several years we have tried to complete the verification of these data. Thanks to a grant from National Science Foundation, we have now completed the verification of the data and through additional funding in computer time from Harvard-Smithsonian Center for Astrophysics, and the perseverance and hard work of my assistant, Elizabeth Waagen, we have completed processing of the "gap" data. In the last month Elizabeth ran in the computer 325 boxes of cards - about 650,000 observations. Thus, our data from 1960, when our processing by computer started, to the present are all processed, sorted by star and date, on magnetic tape in machine-readable form and accessible to the astronomical community.

Our goal is to have all our data, since our founding, keypunched, verified, processed, and in machine-readable form, and thus have easily accessible 70 years of data files on a large number of variables in our program.

PUBLICATION OF DATA

AAVSO Report 30 containing light curves of long-period variables from 1963 to 1966 was the last report we published, in 1975. For several reasons, the publication of our observations has been delayed. These are:

1. Change of computer system at Center for Astrophysics. This required converting all our programs and data files to the new system, and at the time slowed our operation immensely.
2. Enormous increase in the amount of data to be published. Report 30 contained 250,000 observations. Report 38, in preparation, contains one-half million observations.
3. Bottlenecks in the preparation of the data for publication.
4. The absence of a high quality plotter in the new computer system.

I would like to elaborate on the last two items. The most time-consuming, but essential process in the publication of our data is the editing, which involves checking each observation for accuracy against others and deleting erroneous observations. Final checking, which has to be done by me, is a bottleneck due to my many other responsibilities. At this time we are trying to find ways to expedite this editing process.

Also, the Calcomp plotter on the old computer system has not been interfaced into the new system, and the available Versatec plotter does not give reproducible quality graphs. Therefore, this year we searched for other means of high-quality computer plotting of our data. The FRS80 Graphics Computer of AVCO Computer Services met our needs and after long negotiations, we have decided to use this graphics computer. Our plotting programs have been converted to that system by our member, Richard Strazdas, and we are trying to find ways to make the use of this system most cost efficient so that we can afford it. Our goals are to overcome the difficulties and to publish our reports.

AAVSO VARIABLE STAR ATLAS

The Variable Star Atlas project that we undertook in 1974 has now been completed. We can be proud of this Atlas and congratulate Charles Scovil for his excellent job. Final stages of the Atlas required a team effort, and this summer we had to make this project a priority and devote a major part of most of the staff's time.

SPECIAL REQUESTS

Variable stars are proving to be among the most important and exciting fields of astronomy. As the search to understand the mysteries of these stars stretches to both shorter and longer wavelengths of the spectrum, the visual region sandwiched in between becomes that much more important to correlate and interpret results. Thus, our contributions to the field keep increasing by leaps and bounds.

Each year we receive more and more requests from astronomers for our data, and this year was no exception. We received the largest number of requests, 112, eight percent more than last year's record high. We have filled all of these requests. This translates to about one request for every two working days. Those of you who have visited our Headquarters have often witnessed a call from an astronomer in California, Texas, or Washington, who has an immediate need for our data. We are playing an important and indispensable role in variable star astronomy today.

This year's requests for data were on the following types of variable stars in order of the number of requests we received:

1. Dwarf novae - U Gem and Z Cam type stars
2. Long period variables
3. Semiregular variables
4. Novae and recurrent novae
5. Symbiotic stars - Z And type
6. Unique stars like FG Sagittae
7. R Coronae Borealis stars
8. Nebular variables
9. Eclipsing binaries
10. RR Lyrae stars
11. RV Tauri variables
12. Cepheids

Requests came from astronomers throughout the United States and around the world. A list of the special requests and a brief description of the content of each is given at the end of my report.

Here I wish to share some highlights with you. Our major contribution was the simultaneous observing of stars scheduled to be monitored by several spacecraft, such as High Energy Astronomical Observatory (HEAO-2), and the International Ultraviolet Explorer (IUE), and also by large telescopes at Mt. Palomar, Mt. Lemmon, and Tenerife Canary Islands. We participated in 20 observing programs, and our

simultaneous monitoring and continuous communication with the astronomers assisted them in the efficient use of their instruments.

Four times this year, Dr. Stephen Mayo and his colleagues from the Royal Greenwich Observatory in England were scheduled to observe the dwarf novae at outburst with the 150 centimeter infrared flux collector, at Tenerife, Canary Islands. The recent observing run also included simultaneous observing at Cape Town and with the IUE satellite. In each case, Dr. Mayo informed us of their stellar targets and requested that we inform them daily by phone which of the stars had reached maximum. You, our observers, kept a vigil during these times and kept me informed so that Dr. Mayo could be alerted.

Similarly, Dr. Hildebrand and his colleagues from the University of Chicago continued to observe at Mt. Lemmon, Arizona, the dwarf novae at outburst to detect the short oscillations on the order of seconds. The assistance that our observers provided was crucial to the success of their experiment. Dr. Hildebrand and Dr. Stiening wrote, "Our observing run was greatly assisted by the AAVSO observers. We are most grateful to them for their help and for the advice you gave us in planning for the run. An interesting result of our work was the detection of coherent oscillations with the period of $7\frac{1}{2}$ seconds from SS Cygni - the shortest period yet observed from such an object. The help which you give us is very essential for the success of our work."

Throughout the year we have been in communication with Drs. F. Seward and G. Fabbiano at the Center for Astrophysics and the guest investigators on the scheduling of the cataclysmic variables with HEAO-2. There are many questions that are still not answered. We still do not know the real causes of the outbursts, how the matter is being transferred from the cool companion and accreted onto the hot star, the nature of the accretion disc, the nature of the hot star, etc. Astronomers such as Keith Horne from the University of California, whom we recently assisted when he was observing at Mt. Palomar, are interested in how the spectrum, thus temperature, changes as these stars brighten. France Cordova is interested in correlating the data taken by IUE and HEAO-2 with our visual observations. Richard Wade is interested in the ultraviolet spectrum when these stars are at minimum. Our observers played an important role in the research of each of these astronomers. France Cordova wrote, "The real discoveries of these stars belong to the men and women who keep vigil on them."

The keen eye of our observers to catch the unusual behavior of the variables is very important. For example, when AM Herculis started to fade, many of you alerted me and I, in turn, called a number of astronomers who had requested to be informed when AM Her went down. As a result, very important observations were made at Kitt Peak and Mt. Hopkins Observatories for the first time when this star was in its low state. Recently, Dr. S. Tapia from Kitt Peak National Observatory wrote, "Thanks to your interest in these objects, I was able to observe AM Herculis during the cycle and confirmed that the polarization at 8500Å remains as large as when the star is bright. This result indicates that the luminosity of the M dwarf companion is negligible compared with the faint magnitude of AM Hercules. Thus, the under-luminous companion appears to be characteristic of those objects. I am grateful to you and the members of the AAVSO for the dedication and indispensable support provided to me."

Our data on other types of variables have been just as important. Our long-term data on Mira type variables are essential in understanding the mechanism of behavior in these stars, in understanding how they are pulsating, and in understanding the reasons for the change of period. Once again, Dr. Lee Anne Willson spent three days in our

office discussing many aspects of these stars and copying more of our light curves to aid her theoretical study. When she showed a few of our long-term light curves at an astronomical meeting in Italy, the audience was amazed as to how well and for how long these stars were being followed by the AAVSO. Our data on long period variables are in high demand in scheduling observing programs aboard spacecraft or with large telescopes at Kitt Peak. The data are highly esteemed. Let me tell you an incident. A theoretical paper on long period variables was recently submitted to the *Astrophysical Journal*, and the author had given the phases of the stars in question using the data given in the *GCVS*. The paper was returned to the author with a request that the maxima and minima dates and phases be checked and be confirmed with the AAVSO before re-submission. The author did, and the paper was published shortly after.

Our data on novae and recurrent novae, on *Coronae Borealis*, and on other types of stars were mostly used in correlating observations made with the IUE or HEAO-2 or in the infrared region of the spectrum. Our contributions to astronomy are being cited in many of the astronomical papers. The following are a few:

Hjalmarson, Å., Oloffson, H. 1979, "Time Variability of R Leonis, α Ceti, and Orion A SiO Masers", *Astrophys. Journ.*, 234, L199.

Cordova, F., et al. 1980, "The HEAO-2 Soft X-Ray Survey of Dwarf Novae in Outburst", *Mon. Not. R. Ast. Soc.*, 186, 197.

Hildebrand, R., et al. 1980, "The Evolution of Rapid Oscillations in an Outburst of a Dwarf Nova", *Astrophys. Journ.*, 238, L145.

Lambert, D. L., et al. 1980, "The Keenan and Wing Bands in S Stars", *Mon. Not. R. Ast. Soc.*, 191, 367.

Michalitsianos, A. G., et al. 1980, "IUE Observations of Circumstellar Emission from the Late Type Variable R Aquarii", *Astrophys. Journ.*, 237, 506.

During the meeting of the American Astronomical Society and the Fifth Workshop on Cataclysmic Variables that I attended, I heard several papers that referenced the AAVSO data, and many astronomers praised our work. During the Workshop, Dr. Sumner Starrfield, who was the chairman of one of the paper sessions, asked for a round of applause for the AAVSO and said, "We owe a great debt to your observers. I hope you will convey it to them."

ALERT NOTICES

These permit me to reach interested observers and members when there is a need for special observations. Everyone who is interested receives these Notices free of charge if they mail twelve self-addressed stamped envelopes to Headquarters. This year we issued 6 regular and 3 special Alert Notices. They contained requests to monitor cataclysmic variables during observing runs with IUE and HEAO-2 spacecraft, or at Tenerife, Mt. Lemmon, or Mt. Palomar Observatories, and to alert astronomers to the optical state of these stars; to monitor the symbiotic star, CI Cygni, during scheduled runs with several spacecraft; special monitoring of EQ Mon, the U Gem star with an atypical spectrum; close monitoring of HT Cas to verify its outburst period and to observe its deep eclipses; following the behavior of AE Aqr and recording its short period oscillations; standing requests to monitor and inform astronomers of the minima of R *Coronae Borealis* stars

and the maxima of U Gem and SS Cygni outbursts. The Special Alert Notices were sent during Tenerife observing runs when it was necessary to focus the attention of observers who concentrate on observing cataclysmic stars, and the recent Special Alert Notice was issued to observe the predicted eclipse of the spectroscopic binary HR 913. I am grateful to you, our observers, for your tireless, unselfish, dedicated efforts to help special observing programs, to inform me on the unusual behavior of variable stars, such as AM Herculis, PU Vulpeculae (Nova Vulpeculae 1979), and the minimum of SU Tauri so that the astronomical world may be alerted. I thank each and every one of you for your astronomical contribution.

I wish also to express special thanks and appreciation to those who call or send notes to me on the unusual behavior of the stars before the regular report forms are sent in. These observers are: Jim Morgan, John Griese, Ernst Mayer, Paul Goodwin, John Bortle, Kenneth Medway, Tom Fetterman, Chris Spratt, Bob Annal, Dave Levy, Chris Stephan, Tom Bretl, Ken Beckmann, Michael Smith, Carolyn Hurless, Jack Davis, Dave Rosebrugh, Charles Scovil, Pat Madden, Clint Ford, Bob Ariail, Jim DeYoung, Gus Johnson, George Kelly, Lancaster Hiett, Glenn Chaple, Richard Hill, Steve O'Connor, Adrian Levesque, Keith Danskin, Charles Morris, Georg Comello, William Barksdale, Jim Eckendorf, Peter Collins, Steve O'Meara, Wayne Clark, Kenneth Sabine, and Paul Sventek.

SUMMARY OF OBSERVATIONS

We had a very active observing year. We received 177,424 observations from 371 observers. This is the highest yearly totals ever, and brings our grand total to 4,402,890. From 37 states in the USA came 113,622 observations and 63,802 (36%) observations came from observers in 25 foreign countries. Arizona leads the USA observations, and Canada the abroad ones. It is interesting to note that 36% of our observers have started to observe during last year.

Table I lists the number of observers from each country and their astronomical contributions; Table II from each state in the USA; and Table III is an alphabetical list of observers, giving each observers initial, name, location, the annual total of observations, and inner sanctum observations (13^m8 or fainter, and/or "fainter than 14^m0 and fainter").

Twenty-one observers sent in between 1000-2000 observations. Fifteen between 2000 and 3000. Gene Hanson (new observer) and Lancaster Hiett between 3000 and 4000. Paul Goodwin, Steve Sharpe, and Ernst Mayer between 4000 and 5000, Wayne Lowder and William Albrecht between 5000 and 6000.

Bernard Bois, 7383; Chris Spratt, 8549; and David Levy, 10895 observations.

Ernst Mayer leads the inner sanctum observations with 2138. Next comes Chris Spratt with 1049.

Our photoelectric observers were very active. Lance Allred, Russ Genet, Leonard Kalish, Kevin Krisciunas, Howard Landis, Richard Lines, Howard Louth, Thomas McFaul, and David Skillman contributed valuable data on long period and semiregular variables, eclipsing binaries, and suspected variables.

There was an active participation in the International Campaign to observe Mira photoelectrically and visually.

We are most grateful to all our observers for their astronomical contributions.

INTERNATIONAL COLLABORATION WITH OTHER VARIABLE STAR OBSERVERS' GROUPS

We continue our collaboration with several groups around the world. The observations made by the Variable Star Section of Royal Astronomical Society of New Zealand (RASNZ) on southern long-period variable stars are compiled by their conscientious member, Gordon Smith, and kindly sent to us by their Director, Dr. Frank Bateson. These observations are used in refining the predictions of maxima and minima dates of these stars in our Annual Bulletin, which is used by our observers, by the observers of the RASNZ, and by the astronomical community.

A fruitful and valuable collaboration which started last year between the French Variable Star Observers (AFOEV) and AAVSO continues. Throughout the year, Mr. M. Schweitzer, the recorder of AFOEV, has been kindly sending us observations by their members for inclusion in our data files and for publication with our data, with due credit to AFOEV. The AFOEV also participates enthusiastically in our special observing program for HEAO-2 and the IUE and other observing runs. In a recent letter, Dr. D. Proust, the Scientific Coordinator of the AFOEV, wrote, "The members of AFOEV are happy with the fruitful collaboration and wish to continue this with the AAVSO."

The members of the Astronomical Society of Southern Africa (ASSA) under the direction of Jan Hers, who is the Acting Director, contribute valuable data on southern variables. We are confident that our fruitful collaboration will continue with the enthusiastic observers of ASSA, under the direction of Danie Overbeek, who is now back in South Africa from his sabbatical in the USA, and Jan Hers.

The Hungarian Variable Star Observers continue to send observations to the AAVSO. We cherish the observations of the Berlin, Belgium, and Austrian variable star groups and Japanese Astronomical Study Group.

We continue to exchange literature with groups and institutions in Brazil, Argentina, Mexico, England, Spain, Italy, Netherlands, Scandinavia, West and East Germany, Poland, the Soviet Union, India, Japan, China, Taiwan, and Australia.

COMMUNICATION

Until recently one of our major problem areas was handling the enormous amount of correspondence that we receive. Quite often we answered letters late or sometimes not at all, due to lack of staff at Headquarters. Thanks to Clinton Ford's grant for communication, two years ago we added a part-time secretary to help with the immense correspondence. We have been working very hard to overcome the problem.

We are trying several methods of handling the correspondence expediently and we hope before long we will be up-to-date and keep up with the incoming correspondence. I ask our members for their understanding and patience. Although each piece of correspondence is important in its own right, we have to set priorities when we answer the letters. This year I personally answered about 625 letters, not including short notes. That transcribes to about 3 letters for every working day. I have also acknowledged the annual contributions of each observer. From time to time observers are alerted on the improvements they can make on their observing and reporting of observations. From January to October we have mailed about 3200 pieces of mail from our Headquarters, excluding the mailing of publications and other

material we send to all the membership. Headquarters is a very busy place!

REQUESTS FOR INFORMATION AND NEW MEMBERSHIP

We have received 568 requests for information about the AAVSO. The number of these requests has immensely increased since the appearance of articles about AAVSO in Sky & Telescope this year. This year we have elected 109 annual and 4 sustaining new members. Twenty three members changed from annual to sustaining membership, thus helping to support the Association on a larger scale.

We have sent several Observing Kits to institutes and groups and have helped to set up observing programs in several schools. I have given talks on the AAVSO and variable stars at Boston University, Maria Mitchell Observatory, in a joint university program on science and technology, at Massachusetts Institute of Technology, Newton High School, and to youth groups in Lowell. Many of our members act as ambassadors of AAVSO in their communities by giving talks about variable stars and by encouraging individual astronomy enthusiasts. Special thanks go to all those who publicized the AAVSO and helped to bring new members to the Association.

I wish to remind you that our sponsorship program is still alive. There are several observers in Hungary who wish to be members of the AAVSO and receive our membership publications, but they are unable to do so because they cannot send money abroad. I encourage you to sponsor observers in Iron Curtain countries and give them the opportunity to benefit from our publications.

PUBLICATIONS

The following have been published by the AAVSO this year:

The Journal of the AAVSO, Vol. 8, Nos. 1 and 2, edited by Charles Whitney.

AAVSO Bulletin #43: Predictions of Maxima and Minima Dates of Long Period Variables in 1980, prepared by J. A. Mattei.

AAVSO Bulletin #43 Supplement: Schematic Representation of the Data in Bulletin #43, compiled by Peter Taylor and Josefa Manella.

AAVSO CIRCULARS: Numbers 107 to 120, edited by John Bortle and Charles Scovil.

SOLAR BULLETIN: Vol. 35, No. 9 to Vol. 39, No. 10, edited by Casper Hossfield. Sunspot numbers computed by Peter Taylor and Solar Flare Data partly analyzed by Bruce Wingate.

EPHEMERIS OF ECLIPSING BINARIES AND RR LYRAE STARS FOR 1980: Prepared by Donald Livingston and Marvin Baldwin.

AAVSO PHOTOELECTRIC PHOTOMETRY NEWSLETTER: Edited by David Skillman and Howard Landis.

PREDICTED MAXIMA OF BRIGHT STARS: Prepared by J. A. Mattei and published in the Royal Astronomical Society of Canada's Observers' Handbook, 1980.

Articles were published in the Journal of the Royal Astronomical Society of Canada by J. A. Mattei with the following titles:

"Recent Outburst of WZ Sagittae," "V1668 Cygni (Nova Cygni 1978)," "Behavior of SS Cygni in 1978 and 1979."

And in Sky & Telescope, "Variable Stars and the AAVSO," and "Observing Variable Stars," both co-authored with Ernst Mayer and Marvin Baldwin.

Sincere appreciation and thanks are due to Charles Whitney for his editorship of the Journal; Steve Siok and Agnes Meaney for their assistance in preparing the Journal; Editorial Board for their help refereeing the articles; Peter Taylor and Josefa Manella for compiling the data for Bulletin #43 Supplement and to Peter for computing monthly sunspot numbers; John Bortle and Charles Scovil for publishing the Circular; Casper Hossfield for publishing the Solar Bulletin; David Skillman and Howard Landis for publishing the AAVSO Photoelectric Photometry Newsletter; Donald Livingston and Marvin Baldwin for preparing the Ephemeris of Eclipsing Binaries and RR Lyrae Stars.

EDUCATION AND TRAINING PROGRAMS

In the past two years, Clinton Ford and I have had a special project of checking each preliminary chart of a variable with the data obtained. The project is now completed. We found several stars that needed further work to confirm identification or variability or type of variation. With a special grant from Clinton B. Ford, we hired Heidi Hammel, an M.I.T. student of astronomy, to complete the checking of these stars using Harvard Plate Stacks. Heidi found several cases where the identification of the variable had to be revised. This project has been extremely valuable in improving our charts. Heidi also worked on the period analysis of three variables and compiled data to help to refine the predictions of maxima and minima of variables with preliminary charts.

Dr. John Steiner, a visiting astronomer from Brazil at the Center For Astrophysics, is very interested in U Gem stars. Throughout the year he came to visit our office and examine our light curves and commented how valuable it would be to analyze them. During one of his visits I suggested that one way to expedite the analysis would be to have one of his students do it, and the next thing I knew he was telling me that he had invited one of his students from Brazil to analyze the very interesting cataclysmic variable, SU Ursae Majoris. His student spent two months in the office and did a very thorough job of compiling and analyzing the data. This work will be published as part of his thesis.

Michael Suchko of the Astronomy Department of Boston University volunteered to help analyze the data on Z Ursae Majoris.

Martha Liller's mother, Mrs. Catherine Hazen, wished to volunteer her time to something worthwhile so Martha suggested the AAVSO. Mrs. Hazen has been with us since the summer and she has been very carefully compiling data on the outburst of U Gem stars, a project of utmost importance in understanding these stars.

Dina Ventura from Hampshire College volunteered her time this summer to also compile the outburst data of U Gem stars.

PERSONNEL

We have a great staff at our Headquarters right now. We work as a team and we realize that each of us is an important link in the chain of operation. Let me introduce you to the staff of Headquarters.

The data entry, that is, the keypunching and verifying of the observations, is done by Bethune Kelly and Barbara Silva. Both Bethune

and Barbara came to the AAVSO from the CETA program. After their training period, we were able to hire Bethune under the National Science Foundation Grant and Barbara under the Clinton Ford Data Processing Grant. They are excellent and very careful keypunchers.

The general operation of our office, mailing, processing of new members, change of addresses, filling chart orders, are all handled by our very conscientious and hardworking, capable secretary, Dorothy Haviland.

Elizabeth Waagen, my very dedicated and competent assistant, acts as my right arm. She handles the complete processing of the data, keeps the mailing list up-to-date, prepares the data for special requests, and assists me with correspondence and publications. It is through her hard work that we were able to process the "gap" data.

Beside the four full-time staff mentioned we have several part-time employees. Agnes Meaney, our excellent correspondence secretary, is determined to help me overcome the backlog of correspondence. Recently we added Mary Collins, another very competent secretary, to help Agnes with the correspondence. Jill Gustafson of Harvard University helped us in clerical work and final preparation of the Atlas. Our member, Richard Strazdas, continues to be indispensable in our data processing, particularly in converting our programs to the AVCO Computer System and general consultation in data processing.

ACKNOWLEDGEMENTS

AAVSO cannot operate by one person, or one committee alone. It operates with the efforts of many.

We are grateful to Harvard-Smithsonian Center for Astrophysics for allowing us to use the computer facilities and for the grant in computing time which allows us to process our data. We thank Dr. Owen Gingerich for making this grant possible and Barbara Welther for her valuable help and suggestions in data processing and computer funding from the Center for Astrophysics.

We greatly appreciate the help and support given to the AAVSO by Computer Facility personnel of the Center for Astrophysics.

We thank Dr. Martha Liller, the curator, and Jackie Kloss, the acting curator, of Harvard Plate Stacks for allowing us to use the Harvard Photographic Plates for variable star research and chart work.

We gratefully acknowledge the Clinton B. Ford Grants for data processing and correspondence and the special summer research assistantship.

We are very thankful to the National Science Foundation for the grant made to process our "gap" data, to publish the recent data, and for the travel grant to allow me to attend astronomical meetings.

The National Oceanic and Atmospheric Administration has supported our Solar Division for over two decades. We appreciate the trust they have bestowed on the AAVSO solar observers and for their continued and increasing financial support.

We remember our devoted members, the late Cy and Emily Fernald, who generously supported the association during their lifetime. They continue to support the association with the trust fund they have bequeathed to the AAVSO.

We thank Stamford Observatory for making available the facilities to Charles Scovil for the preparation of AAVSO new charts, the Atlas, and the Circular, and for allowing the 21-inch telescope to be used for special observing programs of the AAVSO.

Our sincere thanks to Margaret Mayall for her tireless efforts in the checking and rechecking of the Atlas which made it possible to publish an Atlas that we can be proud of for its accuracy. We are grateful to Margaret for this and for giving her time and wisdom so generously whenever needed.

Keith Danskin helps us in the office work whenever his flight schedule permits. Our thanks to him.

I extend our appreciation and thanks to members who have taken sustaining membership and who gave above their dues to the General Fund, Margaret Mayall Assistantship Fund, or the Endowment Fund.

Special thanks go to members who made a donation in the memory of our beloved member, Leslie Peltier.

I thank my husband for his support, encouragement, and patience, especially with my working hours and for all the telephone calls that I get -- often in the middle of the night.

My sincere thanks go to all the committee chairmen, officers, members, and to the observers of our association, the unsung heroes of AAVSO.

Let us continue and grow in our efforts to make our association even better.

Respectfully submitted,

Janet Akyüz Mattei
Director

LIST OF SPECIAL REQUESTS
DURING FISCAL YEAR 1979-80

- Acker, A., U. Louis-Pasteur, France. Light curve of FG Sge to compare with the radial velocity results for kinematical study.
- Ashok, N. M. et al. Physical Research Lab., India. See under Kulkarni, P. V.
- Adelman, S. J., The Citadel, Military College of South Carolina. Information on bright, pulsating variable stars (Cepheids and RR Lyrae variables) to set up a spectrophotometric observing program.
- Augason, G. C., NASA Ames Research Center. Recent light curve of α Ori.
- _____, Projected phase and magnitude estimate, and predicted maximum and minimum dates for R Aql to schedule observations.
- Becker, R. H., NASA Goddard Space Flight Center. Light curves of classical novae GK Per, T Aur, V603 Aql, CK Vul, CP Lac for correlation with X-ray data from HEAO-2.
- Bath, G., Oxford U., England. Light curves of cataclysmic variables GK Per and AY Lyr for correlation with the theoretical models.
- Bond, H. W., Louisiana State U. Light curve of AY Lyr to determine the type of the outburst (narrow or wide - supermaximum), on Oct. 22, 1979. AAVSO data were crucial in interpreting the interesting spectra obtained during this outburst.
- Brecher, K., Boston U. Longterm light curve of α Ori and FG Sge for analysis.
- Buhl, D., NASA Goddard Space Flight Center. Light curves of Mira variables \circ Cet, R Leo, W Hya, S CrB, χ Cyg, and VX Sgr to correlate with radio observations.
- Catchpole, R. M., South African Astronomical Obs. Information on historical AAVSO lightcurves of Mira variables.
- Clark, F., NASA Goddard SFC-U. Kentucky. Date and brightness of the maximum in April, 1980, and projected phase and magnitude estimate for July 7 on R Hya, to correlate with radio observations.
- Coleman, L., U. of Texas. Light curve and reprint of article on WZ Sge.
- Cordova, F., Los Alamos Scientific Lab. Observations on SY Cnc, TU Leo, WX Hyi, AB Dra, MV Lyr, WZ Sge, and EM Cyg to correlate with X-ray observations from HEAO-2.
- _____, Information on the visual behavior of EQ Mon. No maximum recorded in the recent years. Its spectrum and x-ray data peculiar, and not typical of a cataclysmic variable.
- _____, Simultaneous optical coverage and immediate notification of outbursts of U Gem and Z Cam stars during IUE observing run.
- _____, Light curves and listing of individual observations on AH Her, SU UMa, SY Cnc, and AY Lyr.
- _____, Listings of individual observations on AY Lyr, V436 Cen, HT Cas, AB Dra, WX Hyi, RS Oph, SU UMa, GK Per, AH Her, X Leo, U Sco, V1017 Sgr, T Pyx, and SY Cnc to correlate with X-ray data from HEAO-2.
- _____, Pre - and simultaneous optical coverage of the Oct., 1980, outburst of U Gem for HEAO-2 observing run.
- _____, Information on the longterm behavior of U Gem to assist the scheduling of HEAO-2.
- Cowley, A., U. of Michigan. Light curves of SS Cyg.
- Crowe, R., U. of Toronto. Light curves from 1977 to 1980 on 17 Mira variables to compare spectral with optical light variations. AAVSO Bulletin 43 to schedule further observations.
- Cunningham, E., Hatfield Polytechnic Obs., England. Listing of individual observations on RY Tau, T Tau, SU Tau, RW Aur, XX Cam, SU Tau, R CrB, GU Sgr, SV Sge, RY Sgr, V482 Cyg, and UV Cas to correlate with infrared observations.
- _____, Further listings of observations on R CrB and T Tauri type stars.

- Dabrowski, J. P., Fayetteville State U. Information on the location and the basic characteristics of V644 Cen, RZ Cnc, AR Pav, V383 Sco, and BL Tel, to help set up an observing program.
- DeGioia-Eastwood, K., U. of Wyoming. Light curves of 36 longperiod variables from 1977 to 1980 to determine the phase of infrared observations.
- Dickinson, M., National Geographic Magazine. Statistical data on Cepheids and RR Lyr type variables to be used in the National Geographic book, *Our Universe*.
- Dunham, D., IOTA. Optical behavior and finding chart of S Sct for occultation observations.
- _____, Light curve and projected brightness of X Cnc for observing its occultation.
- Feibelman, W., NASA Goddard Space Flight Center. Variability information and finding chart of CL Sco to be used during IUE observation.
- Fu, F., World Book Encyclopedia. Information on the physical parameters of Deneb and Antares.
- Guinan, E., U. of Villanova U. Longterm optical and photoelectrical data on X Per; information on V Sge, the elements of its eclipses; and lightcurve of the recent outburst of WZ Sge.
- Hall, A., Newtonville, MA. Information on Julian Day calendar.
- Hayes, D., Columbia U. Longterm lightcurve of α Ori to correlate with polarimetric observation.
- _____, Lightcurve of Mira.
- Henshaw, C., Cheshire, England. Longterm lightcurve of Eta Gem for analysis.
- Hildebrand, R., U. of Chicago. Light curve and listing of individual observations of SS Cyg to correlate with the high speed photometric observations. An interesting result of this work has been the detection of coherent oscillations with a period of $7\frac{1}{2}$ seconds from SS Cyg - the shortest period yet observed from such an object.
- _____, Pre and simultaneous optical coverage and immediate notification of outbursts of U Gem and Z Cam stars to assist high speed photometric observations from Mt. Lemmon in June, 1980.
- _____, Listing of individual observations of AH Her to assist the analysis of very rapid oscillations of this object.
- _____, Simultaneous optical coverage and immediate notification of outbursts of U Gem and Z Cam stars, during observing run from Mt. Lemmon in October, 1980.
- Hill, D., Tucson, AZ. Longterm light curve of R Lyr for analysis.
- Holm, A., NASA Goddard Space Flight Center. Information on the light variation of R CrB stars, and the outbursts of U Gem.
- Horne, K., California Inst. of Tech. Immediate notification of outbursts of dwarf novae in Sept. to observe them spectroscopically at Mt. Palomar.
- Iijima, T., U. De Padova, Italy. Light curve of V Sge to correlate with spectroscopic observations.
- Inoue, T., Falmouth, MA. Light curves of VY UMa, RU Cep, and R Lyr for analysis.
- Jacchio, L., Harvard-Smithsonian Center for Astrophysics. Information on the optical behavior of novalike object in Vulpecula (1979) to include in his book on variable stars.
- Jensen, K., California Inst. of Tech. Simultaneous optical monitoring of AH Eri during HEAO-2 observing run.
- _____, Simultaneous optical coverage of V1017 Sgr, TT Ari, HT Cas, V350 Ori, and AH Her during IUE and HEAO-2 observing runs.
- Jewell, P., U. of Illinois. Light curves of IK Tau, R Leo, R LMi, S CrB, WX Ser, U Her, R Aql, and R Cas.
- _____, Longterm light curve of U Ori, and date and magnitude of maximum in 1979.
- Kelley, G., Glade Spring, VA. Longterm light curves of SZ Lyr for analysis.

- Knapp, J., California Inst. of Tech. Light curve of Mira to correlate with radio observations.
- Ku, W., Columbia U. Listings of individual observations of Orion variables to correlate with x-ray data from HEAO-2.
- Kulkarni, P. V., Physical Research Lab. Light curve and listing of both visual and photoelectric observations on X Per to correlate with new infrared observations.
- Kulkarni, P. V. et al., Physical Research Lab., India. Information about the types, observations, finding charts and publications of data on dwarf novae observed by AAVSO, in order to set up a ground-based, new infrared photometric observing program.
- Liebert, J. W., U. of Arizona. Notification on the fading of AM Her.
- Luck, E., Louisiana State U. Light curve of R Sct to correlate with spectroscopic observations.
- MacConnell, J., C.I.D.A., Venezuela. AAVSO Bulletin of Predicted Dates of Maxima and Minima of long period variables.
- Mayo, S., Royal Greenwich Obs., England. Immediate notification of outbursts of U Gem and Z Cam stars between Nov. 14 and 29 in order to monitor them with the 150 cm. infrared flux collector in Tenerife, Canary Islands.
- _____, Immediate notification of the outbursts of cataclysmic variables between Feb. 8 and 21, 1980, to assist infrared observations at Tenerife.
- _____, Immediate notification of outbursts of cataclysmic variables between May 2 and 22, 1980 to assist infrared observations at Tenerife.
- _____, Immediate notification of outbursts of cataclysmic variables between Aug. 5 and 11 in order to monitor them simultaneously with IUE satellite, infrared flux collector, and large optical telescope.
- _____, Light curve and listing of individual observations of UZ Ser for correlation with infrared data.
- McGraw, J., U. of Arizona. Light curves of WZ Sge, RS Oph, V1017 Sgr.
- McLean, I., U. of Arizona. Light curve of Mira during the International Mira Campaign when simultaneous observations were obtained in different wavelengths with different measurement techniques.
- Merrill, M., Kitt Peak National Obs. Light curves of V1668 Cyg and WZ Sge, and finding charts for V1668 Cyg and the supernova in M100.
- Michalitsianos, A., NASA Goddard Space Flight Center. Finding charts of SY Mus, RX Pup, and FN Sgr for identification with IUE.
- _____, Light curve of R Aql for correlation with IUE data.
- Mufson, S., Indiana U. Historical light curve of X Per.
- Nather, E., U. of Texas. Information on the results of Harvard Plate Search on CV Aqr field.
- Noah, P., U. of Toledo. Historical light curve of X Oph for correlation with spectroscopic observations.
- Nordsieck, K. H., U. of Wisconsin. Standing request to be alerted of the outbursts of SS Cyg in order to gather spectropolarimetric observations during maxima.
- _____, Light curve of SS Cyg.
- Olofsson, H., Onsala Space Obs., Sweden. Light curves of R Cas, X Cyg, R Aql, and U Ori for correlation with radio observations.
- Pasachoff, J. M., Williams College. Light curve of Mira.
- Patterson, J., Harvard-Smithsonian Center for Astrophysics. Light curve of the three outbursts of WZ Sge.
- Pilachwozski, K., Kitt Peak National Obs. Information on the date of maximum of Z Oph in 1980, and the predicted maximum in 1981 to schedule observations.
- Pop, V., Observatorill Astronomic, Romania. Copies of AAVSO articles on XZ Cyg.
- Powers, B., Alexandria, VA. Information on stars that are good candidates for science fair projects.

- Proust, D., Observatoire De Paris, France. Maxima and minima dates and magnitudes of Mira from 1896 to present, to determine period change.
- Sherrington, M., U. of Leicester, England. Light curve and listing of individual observations of TT Ari for correlation with photometric data in the near infrared.
- Starrfield, S., Arizona State U. Historical light curves of novae, V1668 Cyg, NQ Vul, V1500 Cyg, GK Per, and recurrent novae, WZ Sge, T Pyx, and RS Oph.
- Steiner, J., Harvard-Smithsonian Center for Astrophysics. Historical light curve of Z Cam to correlate HEAO-2 observations and theoretical models.
- Stencel, R. E., J.I.L.A., U. of Colorado. Light curve of α Ori.
- _____, Finding charts for R Aqr, BF Cyg, RS Oph, Z And, CH Cyg, AG Peg, FG Sge, T CrB, AX Per and AG Dra to be used during observing run at McGraw Hill Obs. at Kitt Peak.
- Stiening, R. F. et al., Stanford U. See under Hildebrand.
- Stover, R., U. of Texas. Light curves and listings of individual observations of SS Cyg and U Gem for correlation with spectroscopic data.
- Swasenberg, Mr., Astronomy Magazine. Ephemeris on δ Cap for Sept., 1980, to be used in Astronomy.
- Szkody, P., U. of Washington. Light curve and listings of individual observations of AE Aqr.
- _____, Light curve and listings of individual observations of U Gem during its short outburst in December, 1979.
- _____, Simultaneous optical observations of AY Lyr, YZ Cnc, SU UMa, WX Hyi, VW Hyi, Z Cha, CU Vel, V436 Cen during scheduled IUE observations.
- _____, Listings of individual observations of YZ Cnc, AH Her, SY Cnc, EM Cyg, and RX And for correlation with the IUE and optical spectroscopic data.
- _____, Listing of individual observations of AY Lyr during its supermaximum in May, 1980.
- Tapia, S., U. of Arizona. Light curve of R Aql for correlation with polarimetric data. Information on the fading of AM Her.
- Tomaszewski, L., U. of Western Ontario. Light curves and listings of individual observations of Mira, μ Cep, V CVn, and χ Cyg.
- Wade, R., California Inst. of Tech. Pre and simultaneous optical monitoring of RX And, SS Aur, U Gem, YZ Cnc, Z Cam, T Leo, EX Hya, AB Dra, and SS Cyg, and notification of their optical state during IUE observing run in February. The objective was to obtain IUE spectra of these objects during minimum.
- _____, Light curves and listings of individual observations of RX And, YZ Cnc, U Gem, and SS Aur for correlation with IUE observations.
- _____, Light curves of 27 cataclysmic variables to correlate with the multichannel spectroscopic data.
- _____, Photoelectric data on the bright spectroscopic binary HR 913.
- Wallerstein, G., U. of Washington. Dates of maxima and magnitudes for Mira for correlation with spectroscopic data.
- Webbink, R., U. of Illinois. Light curve of the old nova V841 Oph (nova 1848).
- White, J., Downey, CA. A selected list of variables to be used in the Problicom - photographic nova search program.
- White, N., Lowell Observatory. Historical light curve of α Ori.
- Williams, R. E., U. of Arizona. Light curve and listings of individual observations of U Sco, to be incorporated in the forthcoming article.
- Willner, S., U. of California. Light curves of R And, RX Boo, R Lyn, V CVn, V CrB, T Dra, and R Aql from 1976 to present.
- Willson, L. A., Iowa State U. Historical light curve of R Hor for analysis of its period.

- Willson, L. A., Iowa State U. Spent 3 days at HQ, copied significant number of light curves of longperiod and symbiotic variables to aid her in the theoretical studies of these stars.
- Witkoski, M., Camp Hill, PA. A list of supernovae to be used in the article in *Astronomy*.
- Wolf, B., Astronomisches Institut der Universitat, Germany. Information on the discovery of V1668 Cyg.
- Wu, C., Computer Sciences Corporation. Listings of individual observations and light curves of SU UMa, Z Cam, SS Aur, EM Cyg, and AR And for correlation with IUE data.

TABLE I

<u>Country</u>	<u>No.of</u> <u>Obs.</u>	<u>Total</u> <u>Obs.</u>	<u>Country</u>	<u>No.of</u> <u>Obs.</u>	<u>Total</u> <u>Obs.</u>
Argentina	1	13	Japan	6	3847
Australia	5	3147	Netherlands	1	1157
Austria	6	2849	Norway	1	191
Belgium	5	2433	Poland	1	231
Brazil	9	138	Romania	1	739
Canada	23	25998	Scotland	1	5
Czechoslovakia	1	445	South Africa	9	1217
England	5	1502	Spain	2	2424
Fed. Rep. Germany	9	6049	Switzerland	1	52
France	3	1284	Turkey	1	121
German Dem. Rep.	1	1158	U. S. A.	244	113622
Greece	3	3438	Venezuela	1	82
Hungary	25	4095	Zimbabwe	2	558
Italy	4	629			
			TOTAL	371	177,424

TABLE II

<u>State</u>	<u>No.of</u> <u>Obs.</u>	<u>Total</u> <u>Obs.</u>	<u>State</u>	<u>No.of</u> <u>Obs.</u>	<u>Total</u> <u>Obs.</u>
Alabama (AL)	2	380	New Hampshire (NH)	3	115
Arizona (AZ)	8	14736	New Jersey (NJ)	11	5413
Arkansas (AR)	1	24	New Mexico (NM)	4	2785
California (CA)	27	7287	New York (NY)	16	13016
Colorado (CO)	8	4623	North Carolina (NC)	1	319
Connecticut (CT)	8	4310	North Dakota (ND)	2	303
Florida (FL)	9	1697	Ohio (OH)	23	10674
Hawaii (HI)	1	5869	Oklahoma (OK)	1	22
Illinois (IL)	17	3118	Oregon (OR)	5	161
Indiana (IN)	3	2281	Pennsylvania (PA)	10	2274
Iowa (IA)	2	189	Rhode Island (RI)	2	214
Kansas (KS)	4	478	South Carolina (SC)	6	1393
Louisiana (LA)	5	6096	Tennessee (TN)	1	4
Massachusetts (MA)	11	2732	Texas (TX)	7	324
Maryland (MD)	3	450	Vermont (VT)	1	68
Michigan (MI)	6	1589	Virginia (VA)	7	7042
Minnesota (MN)	2	357	Washington (WA)	2	1296
Mississippi (MS)	1	32	West Virginia (WV)	1	1851
Missouri (MO)	7	2915	Wisconsin (WI)	16	7185
			TOTAL	244	113,622

TABLE III - AAVSO OBSERVERS 1979-80

ALZ	L. Adam, Hungary	13	CMG	G. Comello, Netherlands	1157-	46	
AD	R. M. Adams, MA	1541-	237	COE	E. Costa, Brazil	1	
AB	W. Albrecht, HI	5869-	88	CSD	D. Costanzo, VA	37	
ALG	G. S. Aldering, MI	6	CDA	A. Coulombe, Canada	28		
ALL	L. Allred, MN	266-	PEP	CR	T. Cragg, Australia	2906-	668
AJR	J. R. Andress, OH	65-	3	CDS	D. Cross, Canada	64	
AWR	R. Andrews, OH	89	CRR	R. E. Crumrine, NY	236		
ANN	R. J. Annal, CA	2220-	852	DAE	E. Dalos, Hungary	79	
ARI	R. B. Ariail, SC	888-	117	DAN	J. Danko, Hungary	11	
ASZ	J. Asztalos, WI	11	DAK	K. Danskin, NH	41		
ATW	P. Atwood, CT	147	DSE	E. C. DaSilva, Brazil	1		
BTR	T. R. Baker, WI	327-	69	DSL	L. A. DaSilva, Brazil	16	
BM	M. E. Baldwin, IN	3790	DV	G. Davidson, KS	157-	5	
BRM	R. M. Bales, OR	48-	2	DAJ	J. Davis, MD	125-	20
BBN	W. Barbin, PA	118-	3	DMS	M. S. Davis, CT	38	
BWK	W. S. Barksdale, FL	594	DCS	L. Deicsics, Hungary	27		
BSF	S. F. Barnhart, OH	293-	24	DGR	R. C. DeGraeve, MI	16	
BSR	S. Baroni, Italy	247	DEF	F. T. DeStefano, MA	72		
BB	R. S. Bates, MA	192	DEY	J. A. DeYoung, VA	1434-	87	
BAU	J. Bauer, W. Germany	541-	7	DMN	D. Dierick, Belgium	780-	140
BAE	A. Beaman, IL	3	DRG	R. Diethelm, Switzerland	52-	21	
BBA	B. B. Beaman, IL	609-	56	DIL	W. G. Dillon, TX	129	
BCJ	C. J. Beaman, IL	23-	1	DCH	C. Doerr, OH	11	
BKY	K. E. Beaman, IL	43-	3	DMR	R. E. Domen, OH	11	
BEJ	J. Beaver, OH	112-	1	DUR	M. V. Duruy, France	409-	1
BKK	K. Beckmann, MO	1895	DGP	G. Dyck, MA	9		
BTY	T. Benner, PA	156-	2	ECJ	J. H. Eckendorf, AZ	596-	90
BSB	S. B. Bennici, OH	3	ECK	C. Eckert, W. Germany	267-	2	
BRX	R. Beria, Italy	20	EHR	E. Ehrhart, CA	59		
BSG	G. S. Berns, CA	1	ECL	C. L. Evans, VA	10		
BIL	G. A. Bilodeau, CA	80-	41	FRW	W. B. Farrar, Jr., NM	302-	48
BKN	A. Birkner, IL	81	FCA	C. A. Fausel, MI	241		
BLD	D. L. Blane, S. Africa	34	FEN	A. Fenyvesi, Hungary	28		
BOH	D. Böhme, E. Germany	1328	FJO	J. O. Ferreira, Brazil	5		
BOI	B. Bois, Canada	7383-	235	FET	T. I. Fetterman, NJ	769-	72
BNC	C. Bordner, CO	31-	7	FKT	T. Fike, IL	9	
BRJ	J. E. Bortle, NY	2034-	599	FLT	R. W. Fleet, Zimbabwe	236-	8
BZC	C. Borzelli, NJ	25	FLG	G. Fleischer, Austria	181		
BPW	P. W. Bradshaw, CT	4	FEM	E. M. Flynn, IL	851-	12	
BAP	P. A. Bradley, LA	12	FD	C. B. Ford, CT	1264-	428	
BRE	E. M. Bram, CA	6	FOJ	J. Formo, WI	21		
BTB	T. C. Bretl, KS	207-	18	FT	G. Fortier, Canada	218-	5
BLP	P. Brlas, Hungary	18	FOB	B. Foyer, IL	6		
BTG	T. G. Browning, OR	19	FRJ	J. Fragola, NY	15		
BFD	F. D. Bruner, IN	9	FPK	P. K. Frank, OK	22-	1	
BUO	A. T. Bueno, CA	800-	29	FIV	I. V. Freitas, Brazil	7	
BPE	P. E. Burke, Australia	33	FR	E. E. Friton, MO	171		
BUS	R. Buss, ND	136	FMG	G. C. Fugman, WI	13		
BUL	T. Butler, MO	84	GDB	D. Gabor, Hungary	895		
CDM	M. Caldwell, IL	2	GJW	J. W. Garasich, PA	333		
CWA	W. Campney, Canada	504-	8	GDR	R. J. Gardner, CA	42	
CJA	J. A. S. Campos, S. Africa	161	GEN	R. M. Genet, OH	52-	PEP	
CAN	E. R. Canada, AL	6	GJA	A. J. George, Jr., OR	47		
CJR	J. R. Caruso, NY	61	GHO	L. H. Ghio, Argentina	13		
CIT	M. Cavagna, Italy	297	GGI	G. Giannotta, Italy	65		
CGF	G. F. Chaple, Jr., MA	3	GLF	F. Glenn, NY	454		
CLK	W. Clark, MO	202	GLW	W. Glenn, NY	455		
CEW	E. W. Clement, FL	164	GOP	P. N. Goodwin, LA	4017-	546	
CLB	R. Clyde, OH	97	GLM	L. M. Gorski, IL	74		
CLO	A. Cole, FL	31	GJH	J. H. Grant, SC	17		
COL	P. L. Collins, MA	318-	12	GRI	J. W. Griese, CT	2082-	1005

TABLE III - AAVSO OBSERVERS 1979-80

GDJ	D.J. Griffith,S.Africa	14	LEV	A. J. LeVeque, CA	36
GA	A. S. Grossman, CA	1152	LAJ	A.J. Levesque,Jr.,NH	15
GML	M. Grunanger, Austria	64	LVY	D. H. Levy, AZ	10895- 9
GRZ	H. Grzelczyk,W.Germany	166-	5 LNB	G. C. Lindbloom, PA	353
HK	E. A. Halbach, CO	1269-	1 LIR	R. Lines, AZ	198- 5-PEP
HMR	R. Ham, CO	1037-	8 LDC	D. C. Lobao, Brazil	20
HNJ	J. Hansen, CA	1	LOF	F. G. Loso, NJ	65
HSG	G. Hanson, WI	3191-	21 LOT	H. Louth, WA	364-PEP
HLP	P. Harles, ND	167	LX	W. M. Lowder, NY	5537
HRR	P. Harrington, CT	18	LJM	J. M. Luffman, AR	24
HAV	R. P. Harvan, PA	122	LKS	R. Lukas, W. Germany	196
HWL	W. Hawley, NH	59-	3 LYR	R. F. Lynch, RI	143- 1
HZL	L. Hazel, NY	675-	193 MWT	W. T. Mach,Jr., TX	16
HY	A. S. Heasley, PA	27	MDD	P. Madden, LA	1941-1415
HEF	M. A. Heifner, CO	2193-	190 MWG	W. Maleck, W.Germany	46
HJN	J. Hers, S. Africa	180	MAF	G. R. Marshall,S.Africa	14
HES	C. Hesselstine, WI	20	MRX	H. Marx, W. Germany	2249- 2
HEV	Z. Hevesi, Hungary	38	MSK	K. Mascola, Canada	86
HE	L. Hiett, VA	3651	MYA	A. Massey, Australia	3
HID	D. H. Hill, AZ	76	MTZ	O. Matzek, Austria	60
HRI	R. E. Hill, AZ	346-	31 MGE	G. Mavrofridis, Greece	718
HIR	Y. Hirasawa, Japan	735-	14 MYR	E. H. Mayer, OH	4943-2138
HOH	H. Honda, Japan	1866	MYW	E. W. Mayer, Jr., OH	1067- 452
HOV	G. Horvath, Hungary	150	MCB	R. G. McCallum, Canada	40
HOI	I. Horvath, Hungary	140	MCP	P. McGraw, IL	2
HOU	D. Hough, NJ	16	MKK	K. M. McKeown, CO	32
HDB	B. Hudgens, MS	32	MRH	R. H. McNaught,Scotland	5
HUO	D. J. Hughes-Sventek,CA	159-	1 MSD	D. L. Means, IA	181- 1
HR	C. J. Hurless, OH	2222-	401 MED	K. J. Medway, England	963
HUR	G. M. Hurst, England	340-	28 MEZ	C. Mezosi, Hungary	439
HUZ	R. Huziak, Canada	3	MHL	E.J. Michaels,Sr., TX	56- 2
IDG	D. G. Iadevaia, RI	71	MNW	W. A. Mintel, NJ	1
ITO	M. Ito, Japan	552	MZS	A. Mizser, Hungary	377- 2
JKM	M. G. Jackson,S.Africa	138-	1 MCE	E. Mochizuki, Japan	10
JAG	G. Jaeger, WI	191-	6 MJD	J. D. Moffatt, Canada	4
JM	R. A. James, WI	76	MOD	D. Mohrbacher, OH	3
JJT	J. T. Jeffrey, CA	26-	2 MOL	J. Molnar, VA	1112
JOG	G. E. Johnson, MD	321-	19 MOR	R. L. Monske, PA	929- 13
JJW	J. W. Johnson, MD	4	MJ	A. C. Montague, MI	1228- 7
JRV	R. V. Jones, NC	319	MVJ	J. Moravec, CO	23
KL	L. Kalish, CA	33-PEP	MAJ	A. J. Morehouse, MI	87-PT
KAI	I. Karaszi, Hungary	175	MJA	J. A. Morgan, WI	237
KLY	G. W. Kelley,Jr., VA	651-	241 MOJ	J. E. Morgan, AZ	1014- 341
KIR	P. E. Kirby, OH	253	MRR	C. S. Morris, MA	33
KDR	R. Kirkwood, FL	2	MSV	S. Morris, Canada	27
KPL	P. W. Kneipp, LA	46	MOW	W. C. Morrison,Canada	2946
KS	J. H. Knowles, Turkey	121	MDZ	D. Mucsi, Hungary	114
KOC	A. Kocsis, Hungary	34	MUN	C. R. Munford,England	166
KLK	G. Kohl, AZ	148-	4 MRZ	R. P. Muzinich, CA	121- 1
KHL	M. Kohl, Switzerland	21	MYP	P. A. Myles, MO	14
KLZ	Z. Kollath, Hungary	178	NRH	R. H. Nelson, Canada	117- 1
KHJ	H. J. Koller, Canada	101	NIK	K. Nishimura, Japan	11
KRS	R. S. Kolman, IL	359	NBY	J. M. Nordby, MN	91
KMA	M. A. Komorous,S.Africa	541	NTE	E. Norton, MA	47
KOS	A. Kosa-Kiss, Romania	739	NTS	T. S. Norton, MA	36
KOA	M. Koshiro, Japan	673	OBG	G. O'Brien, CT	7
KIS	G. Krisch,W. Germany	1085	OCN	S. D. O'Connor,Canada	113
KRK	K. L. Krisciunas, CA	99	OJ	J. Olivarez, KS	8
KRU	J. Kruta,Czechoslovakia	445	OME	S. O'Meara, MA	77- 33
LAM	D. Lam, Canada	2	OV	E. G. Oravec, NY	2805
LAR	R. Lambert, TX	12	OGJ	J.C.G. Ortega, Spain	170

TABLE III - AAVSO OBSERVERS 1979-80

OJR	J. R. Osorio, Spain	2254	SC	C. E. Spratt, Canada	8549-1049
OSA	A. Ostermann, Austria	278	STR	R. H. Stanton, CA	106- 86
PAR	R. H. Patterson, VT	68-7-PT	SKS	T. Steckner, Canada	149
PCE	E. C. Pearce, NM	7	SGP	P. Stegmann, NJ	18
PN	A. E. Pearlmutter, MA	404	SHY	H.M. Steinbach, W. Germany	18
PEM	M. Peel, England	25	SZH	H. J. Stelzer, IL	26
PEE	E. Peli, Hungary	13	SET	C. Stephan, OH	483- 22
P	L. C. Peltier, OH	264- 29	STF	G. Stephanopoulos, Greece	2554
PKM	M. Petek, Brazil	59	SWT	R. J. Steward, NJ	18
PED	D. B. Pettengill, FL	421	STQ	N. Stoikidis, Greece	166
PFF	G. Pfeiffer, W. Germany	1311	SJL	J. L. Strater, OH	14
PRY	R. Phelps, OH	6	SVN	P. Sventek, CA	203- 7
PIJ	J. Piriti, Hungary	95	SMZ	M. Szasz, Hungary	20
POJ	J. Polman, Brazil	9	SKB	B. Szoke, Hungary	381
PFJ	F. J. Price, NY	88	FPJ	P. J. Tamas, Hungary	35
PRI	L. H. Price, SC	293	TNV	V. Tangney, WI	6
PRG	G. Prosser, S. Africa	94	TZR	R. Tanzer, NJ	11
PDQ	D. Proust, France	88	TLA	M. D. Taylor, England	8
QPF	P. F. Quinn, WI	161	TM	H. D. Thomas, WA	932
RPZ	P. Racz, Hungary	30	TJB	J. B. Thompson, FL	10
RRE	R. E. Reaves, CA	72	THR	R. Thompson, Canada	169
REH	D. Rehner, OH	27	TAN	A. Tolgyesi, Hungary	545
REC	C. Reese, MO	2	TFN	F. N. Traynor, Australia	4
REP	P. Reinhard, Austria	15	TDM	D. M. Troiani, IL	826- 3
RNT	C. C. Reinhart, OH	12	TUB	V. Tuboly, Hungary	49
RJI	J. I. Riggs, NY	64- 3	TDK	D. K. Turner, NY	22
RIP	M. Rippel, NM	6	TYS	R. L. Tyson, NY	185
RAR	R. A. Robotham, Canada	244	UND	E. Underhay, CA	197
RHY	H. Roche, NY	2	VCP	P. Van Cauteren, Belgium	163
ROR	D. A. Rodger, Canada	166	VNL	F.R. Van Loo, Belgium	349
RB	D. W. Rosebrugh, FL	393	VAA	A.L. Vasconcelos, Brazil	20
ROG	G. M. Ross, MI	11	VET	M. Verdenet, France	787- 201
RR	R. E. Royer, CA	23- 4	VWY	W. Verhaegen, Belgium	10
RJF	J. F. Royl, AZ	1463	VIN	J. V. Vincent, Zimbabwe	322- 6
RPH	H. Rumball-Petre, CA	27	VLJ	J. Volhard, WI	42
SJD	J. D. Sabia, PA	50	VOK	K. Volkmer, CA	325- 4
SAB	K. M. Sabine, CA	1450	VOL	W. Vollman, Austria	2251- 2
SAH	G. Samolyk, WI	2765- 2	WGM	M. S. Wagner, IL	46- 3
SNL	J. G. Sandel, SC	101	WGJ	G. J. Waffan, OH	4
SRN	T. M. Sarna, IL	147- 8	WLL	H. J. Walls, TX	11
SMJ	J. F. Scholl, NY	351	WRN	R. Warden, PA	36- 8
SCE	C. E. Scovil, CT	750- 371	WAB	B. D. Warner, SC	34- 1
SCP	P. Scully, S. Africa	41	WNF	N. F. Wasson, CA	11
SEK	K. G. Sears, NJ	113	WKW	K. W. Watts, CA	1
SNP	P. A. Sernas, IL	11	WBB	W. V. Webb, OH	624
SHS	S. B. Sharpe, Canada	4294- 145	WER	R. J. Weber, KS	106- 10
SSV	S. Shervais, Jr., VA	147	WED	G. J. Wedemayer, WI	117
SRC	R. Shinkfield, S. Australia	201	WEM	M. Wesolowski, Canada	785- 6
SKL	K. Simmons, FL	41	WEF	F. West, AL	374
SKW	W. Simmons, FL	41	WTJ	J. West, TX	24
SKN	C. R. Skinner, NJ	82	WES	R. F. West, IN	45
SDN	D. M. Slauson, IA	8	WYT	T. Weyenberg, WI	4
SHA	H. A. Smith, CA	22	WTE	E. S. Whitt, SC	83
SJ	J. R. Smith, TX	76- 2	WDJ	D. J. Williams, TN	4
STL	M. B. Smith, NM	2470	WLP	P. Wils, Belgium	1131- 94
SOD	J. Soder, OH	19	WJA	J. A. Wilson, MO	547
SOK	M. Somodi, Hungary	183	WLN	K. Wilson, CA	21
SJZ	J. Speil, Poland	231	WTA	T. A. Wilson, LA	40- 1
SPC	C. S. Spell, SC	11	WSN	T. W. Wilson, WV	1851- 334
SLF	L. F. Spieth, CA	20	WNB	B. Wingate, NJ	4295- 2
SPO	J. Spongsveen, Norway	191	WWR	W. R. Winkler, CO	4

