

ANNUAL REPORT OF THE DIRECTOR
OCTOBER 1975 - SEPTEMBER 1976

It is an honor to present to you my third Annual Report as the Director of the AAVSO for the fiscal year 1975-1976.

This year was a year of rapid growth. As I continue my report you will see what I mean.

In the beginning of the fiscal year, Report 30 was published and distributed to our observers who have contributed observations to it, and to the astronomical world at large. We have received many very favorable remarks about this report, which is a source of pride to all of us, particularly to its contributors. Many of these observers, who have been inactive for some time, have re-joined as observers and members again, and I am delighted at this.

Report 31 is in preparation, and is in its editing stage. We hope that this report will soon be completed and in your hands. Reports 30 and 31 cover a 1000-day interval from 1963 to 1966--that is, we are 10 years behind in our main publication. Most of the special requests we get from astronomers are for more recent data. Therefore, to remedy the problem, I have decided that once Report 31 is published, we will publish Reports 38 and 39 covering a 1000-day interval from 1974 through May, 1977. I will make every effort to close the gap of eight years during my directorship. In order to accomplish this goal of publishing the recent data, I need our observers' full cooperation, in that all observations have to reach Headquarters in time. Once we start compiling the data for Report 38 and 39, we will not be able to accept late observations for publication. Therefore, I urge observers who have unreported observations to send them in now; and I strongly urge all observers to report their observations on time - the month after they are made.

As to keypunching and processing old and new observations, I am happy to report that this summer we have closed the gap of unprocessed data. We are now keypunching and processing observations as they arrive each month.

Last year, I reported to you that we had found a solution to our very time-consuming task of hand plotting the data, by developing a density curve program to do the plotting by the computer. I said that when this format meets all the desired requirements then we will have the computer do our plotting. This year our very capable student assistant (and now member), Richard Strazdas, worked on the task of meeting these requirements: ability to sort large volumes of data, to merge data of several months and years, etc. I am happy to report to you that we now have a program for the sorting, merging, and plotting of data. This program will help us immensely when we are working on Reports 38 and 39.

One of the main accomplishments of this year has been the completion of the data for the extension of the Studies of Long Period Variables by Mr. Leon Campbell. This was achieved by our first Margaret Mayall assistant, Martha Shirn, who is a Smith graduate and presently a physics graduate student at Williams College. This extension contains the same type of data as Mr. Campbell's volume; namely, it has the dates, magnitudes and weights of maxima and minima of long period variables for the years from 1950 to mid-1975. The major part of the data had been prepared by Margaret Mayall during her directorship. This work has been brought up to date. After final checking, the data will be published when funds are available for typing and printing.

Our major job of this summer has been to put on magnetic tape all of the data which were on computer cards in our Headquarters. Many of you who have visited Headquarters, and have seen two office rooms filled with stacks and stacks of computer cards, asked the questions, "Do you have copies of these cards?" "No." "What will you do if something happens to them?" "God forbid!" I know this worried Margaret when she was the director and it has worried me since I took charge--with my worry intensifying every time I heard

a fire engine go by, or news of a fire.

I am very happy to report to you that this summer our capable student assistant, now a Harvard graduate, Robert S. Hill, managed to enter 700 boxes of computer cards, 1.4 million observations, on six magnetic tapes, using the format we used for entering Reports 28 29 and 30. These 1.4 million observations are the unpublished data from 1966 through August 1976. There will be several copies of these tapes stored in different locations for safety.

The accomplishment of this job has allowed many of us to take a deep sigh of relief. Also, these tapes will give us a great deal of ease in future handling of this data. For the accomplishment of this job, I would like to extend my sincere thanks to Bob and I would like to share with you a message from him. It reads:

"Many people have been of great assistance in putting AAVSO data on tape. This project could not have been accomplished without Michael Mattei, who transported all the cards, lasted through several afternoons at the computer center, giving up Saturdays to do so, and thought many things through before I did. Richard Strazdas got us started and answered questions and is now working on programs to enable efficient use of the tapes. Barbara Welther was in charge of the all-important matter of funding the computer time. Bob Fitzgerald gave me much information about the computer program we have used. Peter Collins answered many of our questions. Joe Finn got us coordinated with the rest of the computer users. Last, but not least, all the operators at the computer center have been overwhelmingly patient with us and our mammoth computer runs and have provided us much good advice and knowledge."

SPECIAL REQUESTS: Our visual data were in demand more than ever this year. We had over 100% more special requests this year than last and this was a record high. In order to save space I have decided to categorize the requests and share with you some highlights, and then give an alphabetical list of these requests at the end of my report.

This year's special requests came from astronomers and astronomy graduate students from universities and scientific groups in all corners of the United States, Canada, Netherlands, Belgium, England, and South Africa.

We received a total of 41 requests. Of these

- a) 27 on long-period and semi-regular variables.
- b) four on dwarf novae: SS Cyg, CN Ori, RU Peg.
- c) two on Z Cam stars: RX And, TZ Per, AB Dra, AH Her.
- d) two on recent novae: V1500 Cyg, V400 Per, V3888 Sgr, V373 Sct, V1301 Aql.
- e) two on nebular variables: R Mon and VY Tau.
- f) one on the symbiotic star: CI Cyg.
- g) one on recurrent novae: T CrB, RS Oph, T Pyx, V1017 Sgr, W Sge.
- h) one on simultaneous observations of R CrB variables during IR observations.
- i) one on photoelectric data on X Per which Howard Landis contributed very satisfactorily.

The 27 special requests for long period variables indicate very definitely that the study of these stars is of particular importance today, when infrared astronomy is developing with giant steps and radio observations of these variables are proving to be fascinating. These requests also indicate that our place in supplying continuous data to astronomers is definitely unique and that our interest in these stars should continue and never dwindle.

The purpose of the special requests for data on long period variables can be roughly divided into three categories:

1. Scientific research:
 - a. Brightness and phase (i.e., a specific fraction of the period in the cycle of light variation from one maximum point to the next) for correlation with IR observations.

- b. Phase and brightness information for spectroscopic, polarimetric, and radio observations.
 - c. Rough predictions of brightness of Mira variables for scheduling of IR satellite observations, and spectrophotometry.
2. Supportive material for Ph.D. thesis. John Piccirillo wrote "Please extend my gratitude to the members of the AAVSO. I have used your prediction lists extensively in planning my observation program."
 3. Reproducing light curves or information about the maxima and minima with full acknowledgement to the AAVSO in astronomy books.

On the dwarf novae, and Z Cam variables, the majority of requests came from Dr. Szkody, who had used our data before to correlate her IR photometry data with visual phases of AH Her, AE Aqr, SS Cyg, RX And, TZ Per, and AB Dra. Recently she requested more data on dwarf novae. Another request was from Dr. Cash, of University of California, for SS Cyg data during the Apollo-Soyuz experiments. We were very happy to supply him about 1000 observations for the outburst during that time. This was approximately one-fourth of the annual observations of SS Cygni. He was very appreciative and indicated that he will contact us during his future satellite observations.

The special request for data on the recurrent nova T CrB was one of the highlights of the year. Those who were at our Spring Meeting will recall Dr. Webbink's paper on the fascinating marriage between his theoretical studies and our observations on T CrB outbursts. I invite all of you to read his paper in a recent issue of our Journal. As a follow-up to that, Dr. Truran, one of the members of Dr. Webbink's group, spent one day in our office scanning, copying, and working on our very early data of T CrB which Mr. Campbell had gathered on its 1866 outburst. They feel that the detailed study of these observations and their theoretical analysis may lead to a major discovery, with the AAVSO playing a very important supportive role.

In all cases astronomers were very grateful for the data.

ALERT NOTICES: This year we sent one Alert Notice containing three standing requests. These were on U Gem outbursts. All three were detected and Dr. Warner of Capetown University was notified. At the International Astronomical Union (IAU) meeting, he expressed his deep appreciation for this. The other request was for the outburst of SS Cygni for Dr. Feldman, of the University of Ottawa. As usual, our members did not miss any, and Dr. Feldman has been notified in each case in order to enable him to observe in the radio region for emissions during the outburst. The third standing request was for reports of any unusual activity of V1500 Cygni. Dr. H. Smith has been notified whenever appreciable oscillations were observed in this nova.

At the IAU meeting, Dr. Herbig asked me to alert him when T Tau is fainter than $11^m.5$, UZ Tau brighter than $13^m.0$, and EX Lup brighter than $12^m.5$. He is also requesting our observers to keep an eye on VY Tau which is a very strange and interesting T Tauri star with outbursts like SS Cyg but from one to many years apart. I bring this variable to the attention of our observers.

I would like to express my deep appreciation and thanks to all observers, particularly: J. Morgan, E. Mayer, L. Hiatt, K. Sabine, W. Clark, J. Bortle, G. Kelley, R. Ariail, C. Hurlless, R. Annal, C. Scovil, D. Hughes, D. Rosebrugh, and P. Goodwin, who call or drop me a line alerting me to the activities of U Gem stars. It is due to this close cooperation of our observers that I am able to give first-hand information to astronomers when they need it.

I would also like to thank Marvin Baldwin for his excellent handling and distributing of eclipsing binary data to astronomers and graduate students. Thanks are also due to Howard Landis for his valuable PEP observations in support of many scientific research projects.

MEMBERSHIP: During the fiscal year 1975-1976, we elected 151 annual and eight sustaining members. Four members changed to sustaining membership. Lists of the above are found in JAAVSO, Volume 4, No. 2, and Volume 5, No. 1.

We are saddened by the death of our four members, John Shea, Lynn Hildon, Ernie Hatal, and Francis Morgan. Francis Morgan, a long-time member and observer, sent observations up to the month he passed away.

PUBLICATIONS: In the past fiscal year, we have published Volume 4, No. 2, and Volume 5, No. 1 of our Journal. This is one of our main publications, and I thank Dr. Whitney for his excellent editorship and for the encouragement he gives to the membership to publish. I also thank C. Scovil for giving generously of his time to prepare the materials for publication. I thank the Editorial Board and appreciate their efforts in making this publication one that is sought not only by our membership but many astronomers also, as I witnessed from the many favorable comments I received for it at the 16th General Meeting of the IAU this summer.

AAVSO Circular, edited and published by J. Bortle, W. Lowder, and C. Scovil has served an important role in putting out preliminary data about eruptive variables and some other interesting variables. It has been a very effective medium for me to reach our active observers with a list of neglected stars each month. The coverage on these variables has been excellent. Our Circular has received very favorable remarks from our membership in our questionnaires. I extend my thanks to John, Wayne, and Charles for their fine work in the publication of our Circular.

Predicted maxima and minima dates of long period variables for 1976, which have been highly sought by astronomers working with LPV's were published in Bulletin 39. Again in this Bulletin preliminary predictions were extended to January and February of 1977. A Supplement to Bulletin 39 was also published containing a list of neglected variables. Bulletin 39-A showing schematically when some variables are going to be fainter than 13^m was compiled by C. Ford, and Bulletin 39-B, schematically displaying when variables are going to be brighter than 11^m , was compiled by MJ. and P. Taylor. I thank Clinton, Peter, and MaryJane for their fine work.

Predictions of maxima were prepared monthly for Sky & Telescope and annually for Observer's Handbook of the R.A.S.C., along with descriptions of variable types and a light curve of R Scuti.

Variable Star Notes were published three times in the Journal of the R.A.S.C. on the topics: "Peculiarities in the AAVSO Light Curves for 1975", "The Behavior of SS Cygni, and other U Gem and Z Cam stars for 1975", and "Symbiotic Star CI Cygni, and Recent Activities of R CrB and SU Tau".

Annual ephemerides for eclipsing binary stars, RR Lyrae variables, and eclipse of special U Gem stars, prepared by Marvin Baldwin and Donald Livingston, were also published. Special thanks are due to Donald Livingston who has computerized the ephemerides. This service, along with Marvin Baldwin's excellent performance as the Chairman of these committees, has been the reason behind the expansion of these committees and their valuable astronomical contribution.

Monthly Solar Bulletins have been competently prepared by Casper Hossfield and conscientiously published by Carolyn Hurlless. Sudden Ionospheric Disturbance (S.I.D.) activities have been capably coordinated by Robert Ammons.

REQUESTS FOR INFORMATION: Nine hundred nineteen requests for information about the AAVSO were received during the year. This is approximately a 70% increase over the number of requests last year.

INTERNATIONAL COLLABORATION WITH OTHER VARIABLE STAR OBSERVERS GROUPS:

I am delighted to report to you that our collaboration with other variable star groups internationally has also grown in the past fiscal year. Our member Danie Overbeek, Director of the Variable Star Section of the Astronomical Society of Southern Africa, and some

members of his group have been major contributors of data for our southern variables.

The contribution of data from the Albireo Amateur Astronomy Club in Hungary, directed by Bela Szentmartoni, has increased "astronomically" this year. Most of their members observe bright variables with great enthusiasm. Here I will sidetrack slightly. Many contributors of data in the Iron Curtain countries have requested our membership publications. However, due to the increase in the cost of printing and postage we have been limited to send these only to members. Since they can not send money to join the AAVSO, I would like to propose that our members sponsor them. One of our members, Carolyn Hurlless, is already doing that for our member Jaroslav Kruta from Czechoslovakia. I invite any member interested in this to drop me a line with a check for \$11.00.

Ole Klinting, of the Astronomisk Selskab, continues to send valuable data on SS Cyg obtained by his members, and this year on U Gem also. Frank Traynor, Director of the New South Wales Branch of the B.A.A. in Australia, and his members continue to send observations of southern variables. This year we had another variable star observers' group send us observations. They are the enthusiastic Belgian observers led by F. R. van Loo. Along with all the above, M. Duruy, the honorary General Secretary of the French Variable Star Observers (AFOEV), keeps contributing very valuable data on neglected variables. While attending the IAU meeting, I wished very much to get together with Mr. van Loo, Mr. Duruy, and the Director of the AFOEV, Mr. Schweitzer. Due to the French railroad strike and their business commitments, this was not possible. However, our correspondence indicates that they all are very anxious to collaborate with the AAVSO. The same feeling is shared with the Japanese Astronomical Study Group. Last, but not least, as mentioned in my report last year, through the agreement with Mr. Bateson of the V.S.S. of the Royal Astronomical Society of New Zealand, we have been exchanging observations and charts of southern stars. Observations received from them have helped to make our predictions of southern stars more accurate. They in turn have used our predictions in their observations, so this collaboration has proven to be very valuable.

SUMMARY OF OBSERVATIONS: During the fiscal year, 1975-1976, we received 1983 reports from 413 observers. Quite a large percentage of these observers are new. Fifty-four observers sent reports every month, and 16 missed one. 111,916 observations came from observers from the United States, and 59,269 from countries abroad, giving the all-time record of 171,185 observations for the year and a grand total of 3,744,751. This is 18,092 observations over last year's record high. At this point, I am very tempted to say to you "please stop and take a break." But, of course, I will not. I will say, "continue on, and please always strive for quality."

In the past year, 23 observers sent between 1000-2000 observations; eight sent 2000-3000; T. Cragg, C. Hurlless, E. Oravec, D. Overbeek, and S. Sharpe sent between 3000-4000; R. Annal sent between 4000-5000; and L. Hiatt, 5000-6000. As our top observers, E. Mayer made 6,032 observations; U. Hopp 6,051; W. Lowder 6,805; U. Surawski, 6,906, and M. Baldwin, 7,562. E. Mayer continues to go after hard-to-observe stars of interest and leads the inner sanctum with 2,359 observations. Next comes R. Annal with 955 and C. Scovil 715. L. Kalish, H. Landis, H. Louth, D. Skillman, and T. Renner contributed very valuable photoelectric data. Table I lists the number of observers from each country and their astronomical contributions, and Table II from each state in the U.S.A. Table III is an alphabetical list of our observers, giving their observing initials, name, location, total of their observations, and the "inner sanctum" observations.

I wish to thank all of our observers deeply for their efforts, interest, enthusiasm, and very valuable astronomical data.

GIFTS: I would like to express our deep appreciation and thanks to all those members who have contributed to the Margaret Mayall assistantship.

I also want to express my thanks to generous members who contribute over their dues. These contributions help us immensely in the operations of the Association.

I express my sincere thanks to Clinton Ford for his very generous contribution for the AAVSO Variable Star Atlas.

Last but not least, a special thanks to Margaret and Newton Mayall for their continuous gifts for the printing of Report 30 and for general contributions for things that are important for the Association.

PERSONNEL: Florence Bibber, our long-time devoted assistant at Headquarters, retired in December. I would like to express our deep thanks for her long years of service to the AAVSO. We miss her at the office.

Josefa Manella continues to be my very capable and hardworking assistant. Also, Linda Blizard is a conscientious and hardworking member of our Headquarters full time staff. (During the preparation of this issue of the Journal both Josefa and Linda have left Headquarters to go to school).

Several part-time student assistants from Harvard and M.I.T. have helped us in our data processing. Sean Dowling from Harvard, Frank Kreimendahl and Joseph Forgione, from M.I.T. are responsible for the keypunching and verifying of all the incoming data of last year and filling the gap of two months' unprocessed data that existed. Richard Strazdas has been instrumental in all our programming and data processing. He is an indispensable member of our part-time staff.

Marilyn Bibeau, Celia Colbert, and Maria Shao have helped in the general operations of the office and in chart and book distribution. Paula Bulger has brought the referencing of our library and exchange literature up to date.

ACKNOWLEDGEMENTS: Our sincere thanks to Smithsonian Astrophysical Observatory for its support of our computer activities and to Dr. Owen Gingerich for making this possible. Our special thanks to Barbara Welther for always helping us with computer problems. She always finds a way to solve our difficulties.

We are grateful to the National Oceanic and Atmospheric Administration for the grant in support of our Solar Division.

My thanks and much appreciation go to Margaret Mayall who gives generously of her time and knowledge to help us.

Our thanks to the Stamford Museum for allowing Charles Scovill to use its facilities for our chart work and preparation of the Journal and the Circular.

We thank Unitron Instruments, Inc. for printing our Julian Day Calendar.

My heartfelt thanks to my husband for helping us enter the data on magnetic tape, and for his encouragement and support.

My sincere thanks and gratitude to all the officers, committee chairmen, members, and observers for your efforts, enthusiasm, cooperation, and for financial and valuable astronomical contributions. Let us continue this good work.

Respectfully submitted,

Janet Akyüz Mattei

LIST OF SPECIAL REQUESTS
DURING FISCAL YEAR 1975-76

- Barnes, T., U. of Texas. Dates and brightness of observed maxima of TW Cyg, TY Cyg, RU Her, X Oph, RR Sgr, U UMi.
- Braunstein, R., U. of Maryland. Prediction of brightness of T Cas, R Aur, U Ori, S CMi, R Cnc, R LMi, R Leo, R Hya, R Peg, R Aqr, R Cas, o Cet, for scheduling observations with single aperture amplitude interferometer at Mt. Wilson and Palomar.
- Ibid. Copies of AAVSO light curves of ρ Peg, η Her, α Her, R Lyr, and β Peg.
- Buhl, D., Snyder, L., Cahn, J., N.R.A.O. and U. of Illinois. Phases of IK Tau and o Cet for correlations with radio obs.
- Cash, W., U. of California. Listing of AAVSO observations on SS Cyg during Apollo-Soyuz flight for correlation with extreme ultraviolet observations.
- Castelaz, M., U. of Wisconsin. Position information and charts on RX And, AB And.
- Cohen, M., U. of California. Simultaneous optical monitoring of R CrB type stars during observations in the infrared.
- Cox, G., U. of Kent. Copies of AAVSO light curves on VY CMa, W Hya, U Her, S Per, RX Boo, RS Vir and R LMi for correlation with radio observations.
- Feijth, H., Netherlands. 10-day mean values of AAVSO observations of TV Her between JD 2442550-2442800 to correlate with observations of Werkgroep Veranderlijke Sterren.
- Forrest, W., Cornell U. Brightness and phase of RX Boo, X Her, W Aql to be correlated with the infrared data.
- Hall, D., Kitt Peak National Observatory. Data on observed maxima and minima dates, and magnitudes and mean periods on R And, o Cet, R Aur, U Ori, V Cam, R Leo, V CVn, S CrB, V CrB, X Oph, R Aql, χ Cyg, V Cyg, T Cep, RU Cyg, R Cas.
- Henden, A., Indiana U. Data on observed maxima and minima dates and brightness of o Cet for the investigation of speckle angular diameter measurements, for Ph.D. thesis.
- Herbig, G., U. of California. Copies of AAVSO light curves on VY Tau for correlating with spectroscopic and photometric data.
- Hinkle, K., U. of Texas. Copies of AAVSO light curves on o Cet, χ Cyg, R Leo, R Hya, W Hya, and R Aqr for determining phase of infrared spectra.
- Hobbs, R., N.A.S.A. Copies of AAVSO light curves on RT Cnc, W Ori, α Ori, S CMi, BK Vir, V988 Oph, X Oph, R Aql, V450 Aql, UY Cet, o Cet, RR Eri, V352 Ori, RT Hya, RW Vir, S Sct, and χ Aqr for correlation with infrared satellite data.
- Hogg, H., U. of Toronto. Copy of AAVSO light curve of o Cet and projected date of 1976 maximum of this variable, to be used in her book, The Stars Belong To Everyone.
- Jacobsen, M., U. of Arizona. Latest observed maximum date and brightness of X Oph for the identification of a satellite-detected variable.
- Kolena, J., Indiana U. Copies of AAVSO light curves on 20 long period and semiregular variables for determining phase of radio observations for Ph.D. thesis.
- Landstreet, J., U. of Western Ontario. Copies of AAVSO light curves of R And, R Lep, R Gem, R Boo, RU Her, and U Her to be used for comparing the visual with the spectroscopic and polarimetric measurements.
- Liller, W., Harvard U. Photoelectric data on X Per supplied by H. Landis.
- Maran, S., N.A.S.A. Copies of AAVSO light curves of R Leo, and S Ori for correlation with infrared satellite measurements.
- Meeus, J., Belgium. Observed maxima dates and brightness of o Cet for 1975 and 1976 predicted maximum dates.
- Pasachoff, J., Williams College. AAVSO light curve of o Cet from 1839 to 1970 for publication in Contemporary Astronomy.

- Patterson, J., U. of Texas. Copies of AAVSO light curves of RU Peg and CN Ori for determining light maximum in order to study the pulsations of dwarf novae.
- Piccirillo, J., Indiana U. Copies of AAVSO light curves of 47 Mira variables for determining phases of infrared observations for Ph.D. thesis.
- Russell, R., U. of California. Phase and brightness of V Cyg and R Cas.
- Sanner, F., Kitt Peak National Observatory. Projected magnitudes of RS Cnc, Z UMa, RY UMa, SS Vir, V CVn, RX Boo, OP Her, RS Cyg, RW Cyg, and WZ Cas during scheduled observing run for high dispersion spectra.
- Scharlach, W., Kitt Peak National Observatory. Phase during spectroscopic observations of χ Cyg, o Cet, R Aql, S CrB, U Her, VX Sgr, W Aql, RU Her, RR UMi, RR Aql, GY Aql, and Z Cyg.
- Schmidt, G., U. of Arizona. Copy of AAVSO light curve of V1301 Aql (Nova 1975) for correlation with infrared photometric observations.
- Siegmund, W., U. of Washington. Visual magnitude of R Mon for correlation with photometric observations.
- Smith, L., Grumman Aerospace Corporation. Copies of AAVSO light curves on o Cet, U Ori, R Leo, RX Boo, U Her, R Aql, and μ Cep for correlation with infrared data from jet-flight observations.
- Ibid. Projected magnitudes of the above seven variables during scheduled jet-flight observations.
- Szkody, P., U. of Washington. Copies of AAVSO light curves on AH Her, AE Aqr, SS Cyg, RX And, TZ Per, and AB Dra for visual magnitudes and phase determination to be used with infrared data. Also charts for V350 Ori, EX Hya, and T Leo.
- Tapia, S., U. of Arizona. Copies of AAVSO light curves on CI Cyg for correlation with polarimetric data.
- Truran, J., Webbink, R., U. of Illinois. Complete AAVSO data on RS Oph, T CrB, T Pyx, V1017 Sgr, and WZ Sge to correlate theoretical results with observational.
- Wallerstein, G., U. of Washington. Projected maximum and minimum dates for R Leo, S CrB, U Her, χ Cyg, VX Sgr, and S Per for coordinating spectroscopic observations.
- Ibid. Analysis of date and magnitude of maximum of U Ori in August 1975, for correlation with spectroscopic data.
- Warner, B., U. of Cape Town. Copies of AAVSO light curve on CN Ori for correlation with photometric data.
- Williamson, R., Fernbank Science Center. Reference material on RR Ari.
- Worden, S., Sacramento Peak Observatory. Listing of AAVSO data on o Cet for January 1976 and copy of light curve for correlation with spectroscopic data.
- Wyckoff, S., Royal Greenwich Observatory. Listings of AAVSO data on V400 Per (Nova 1974), V3888 Sgr (Nova 1974), V373 Sct (Nova 1975) and copies of light curves, charts and sequence information for the above to be used with spectroscopic observations.

TABLE 1 - COUNTRIES

| Country | No. Observers | Total Obs. | Country | No. Observers | Total Obs. |
|------------------|---------------|------------|----------------|---------------|------------|
| Argentina | 1 | 54 | Netherlands | 1 | 347 |
| Australia | 4 | 598 | Norway | 3 | 58 |
| Austria | 3 | 843 | Poland | 1 | 139 |
| Belgium | 7 | 1851 | Romania | 1 | 743 |
| Brazil | 1 | 11 | Saudi Arabia | 1 | 20 |
| Canada | 22 | 9997 | South Africa | 10 | 4402 |
| Czechoslovakia | 1 | 423 | Spain | 1 | 82 |
| Denmark | 6 | 324 | Sweden | 1 | 94 |
| France | 2 | 276 | Switzerland | 2 | 372 |
| German Dem. Rep. | 2 | 1631 | United Kingdom | 6 | 1276 |
| Greece | 3 | 330 | Uruguay | 1 | 33 |
| Hungary | 27 | 4963 | U. S. A. | 278 | 111916 |
| Italy | 3 | 52 | Venezuela | 1 | 270 |
| Japan | 7 | 1986 | West Germany | 15 | 28004 |
| Mexico | 1 | 90 | TOTAL | 413 | 171185 |

TABLE II - UNITED STATES

| Country | No. Observers | Total Obs. | Country | No. Observers | Total Obs. |
|--------------------|---------------|------------|---------------------|---------------|------------|
| Arizona (AZ) | 1 | 779 | Nevada (NV) | 2 | 456 |
| Arkansas (AR) | 1 | 1121 | New Jersey (NJ) | 10 | 2746 |
| California (CA) | 33 | 14725 | New Mexico (NM) | 7 | 2948 |
| Colorado (CO) | 3 | 1583 | New York (NY) | 14 | 15968 |
| Connecticut (CT) | 15 | 6405 | North Carolina (NC) | 3 | 147 |
| Florida (FL) | 9 | 1651 | North Dakota (ND) | 2 | 8 |
| Georgia (GA) | 3 | 453 | Ohio (OH) | 23 | 13391 |
| Idaho (ID) | 1 | 219 | Oregon (OR) | 2 | 297 |
| Illinois (IL) | 12 | 2681 | Pennsylvania (PA) | 15 | 3168 |
| Indiana (IN) | 6 | 8210 | Rhode Island (RI) | 2 | 93 |
| Kansas (KS) | 7 | 959 | South Carolina (SC) | 2 | 1147 |
| Kentucky (KY) | 1 | 12 | Tennessee (TN) | 4 | 56 |
| Louisiana (LA) | 3 | 2660 | Texas (TX) | 6 | 1978 |
| Maine (ME) | 2 | 239 | Vermont (VT) | 1 | 21 |
| Maryland (MD) | 8 | 2760 | Virginia (VA) | 5 | 5463 |
| Massachusetts (MA) | 15 | 1329 | Washington (WA) | 5 | 674 |
| Michigan (MI) | 5 | 1976 | West Virginia (WV) | 3 | 1955 |
| Minnesota (MN) | 2 | 306 | Wisconsin (WI) | 17 | 10301 |
| Missouri (MO) | 22 | 3031 | TOTAL | 278 | 111916 |

TABLE III - AAVSO OBSERVERS 1975-76

| | | | | | |
|------------------------------|-------|-----|-----------------------------|-------|-----|
| AD R.M. Adams, MO | 1762- | 318 | DEJ J. DeJong, Belgium | 258 | |
| AH P. Ahnert, Gem.Dem.Rep. | 732 | | DEA R. DeMartino, CT | 215 | |
| AB W. Albrecht, WI | 12- | 1 | DEY J.A. DeYoung, WV | 341 | |
| AJ J.A. Anderer, IL | 9 | | DMN D. Dierick, Belgium | 215 | |
| AC C.E. Anderson, MN | 6 | | DRG R. Diethelm, Switz. | 203 | |
| ANR R. Anderson, MO | 10 | | DIL W.G. Dillon, VA | 60 | |
| ANN R.J. Annal, CA | 4473- | 955 | DIX J. Dixon, AR | 16 | |
| ARI R.B. Ariail, SC | 799- | 72 | DRA A.V. Dralle, PA | 44 | |
| ATW P.F. Atwood, CT | 398 | | DUF R.D. Dufur, WA | 13 | |
| BYG G. Babcsany, Hungary | 94 | | DUR M.V. Duruy, France | 147- | 1 |
| BZI I. Palatinecz, Hungary | 153 | | ECK C. Eckert, W. Germany | 441 | |
| BM M.F. Baldwin, IN | 7562 | | EDW D.J. Edwards, MD | 5 | |
| BGH I. Balogh, Hungary | 190 | | EGI A. Egri, Hungary | 71 | |
| BLN T.J. Balonek, MA | 13 | | EHR E. Ehrhart, CA | 87 | |
| BNT J. Banati, Hungary | 22 | | EL J. Ellerbe, Saudi Arabia | 20 | |
| BNO L.R. Barisano, MA | 1 | | ELW S.J. Elwin, Australia | 29 | |
| BPC P.C.A. Barretto, Brazil | 11 | | FRW W.B. Farrar, NM | 746- | 16 |
| BAF F. Bateman, S. Africa | 66 | | FEN A. Fenyvesi, Hungary | 663 | |
| BAU J. Bauer, W. Germany | 1781- | 30 | FEA A.M. Ference, PA | 34 | |
| BBA B.B. Beaman, IL | 115 | | FER Y.A. Fernandez, Uruguay | 33- | 4 |
| BKO R.L. Beck, Canada | 3 | | FJL J.L. Ferreira, CA | 3 | |
| BET C. Bertwell, ID | 219 | | FET T.I. Fetterman, NJ | 240 | |
| BIL G. Bilodeau, CA | 119- | 55 | FIR R. Field, S. Africa | 26 | |
| BKN A. Birkner, IL | 161 | | FIN B. Finke, MO | 53 | |
| BZD L.M. Blizard, MA | 23 | | FIC C. Finke, MO | 1 | |
| BLU B. Blundell, NY | 24 | | FYD J. Floyd, MO | 1 | |
| BZS Z. Bödök, Hungary | 21- | 2 | FD C.B. Ford, CT | 1769- | 574 |
| BOH D. Böhme, Gem.Dem.Rep. | 899 | | *SAS S.A. Forening, Norway | 17 | |
| BOD D. Bohn, WI | 1752- | 347 | *SAS T. Fors, Denmark | 6 | |
| BOI B. Bois, Canada | 128 | | FT G. Fortier, Canada | 179 | |
| BRJ J.E. Bortle, NY | 2950- | 538 | FOV R.G. Fovell, IL | 5 | |
| BJW J. Bowden, KS | 2 | | FRB B.M. Frank, NY | 26 | |
| BMS P.J. Bremseth, Norway | 30 | | FRA L.N. Fraysier, VA | 11 | |
| BTB T.C. Bretl, OH | 38 | | FRI L.A. Frigon, CA | 20 | |
| BLP P. Brlas, Hungary | 21- | 1 | FR E.E. Friton, MO | 50 | |
| BKP P. Brooks, PA | 32 | | FLR D.B. Fuller, MD | 74- | 4 |
| BRT T. Brown, AZ | 93 | | GAN B. Ganiere, WI | 21 | |
| BRY J.T. Bryan, TX | 398- | 96 | GBE B.E. Gardner, PA | 13 | |
| BUW R. Buhrow, AZ | 65- | 3 | GAA P. Garey, MO | 63 | |
| CDE J. Calder, Canada | 203- | 2 | GAP P. Garnavich, MD | 440 | |
| CCM C. Campbell, KS | 1 | | GHO L.H. Ghio, Argentina | 54 | |
| CWA W. Campney, Canada | 1344 | | GCH R.S. Gilchrist, CT | 71 | |
| CJA J.A.S. Campos, S. Africa | 29 | | GLG G.W. Gliba, OH | 9 | |
| CAH H. Carney, FL | 41 | | GO K. Gomi, Japan | 19 | |
| CWQ W. Carter, OH | 5 | | GGJ J.L. Gonzales, Spain | 82 | |
| CIT M. Cavagna, Italy | 35 | | GOP P.N. Goodwin, LA | 2459- | 170 |
| CLR R. Chandler, IN | 9- | 1 | GRK K. Graham, CT | 121 | |
| CHF R.H. Chase, ME | 37 | | GRC A.A. Granc, Australia | 97 | |
| CHC J. Chesman, TN | 15 | | GAS E.R. Grasshoff, TX | 63 | |
| CHM M. Chesman, TN | 15 | | GRT S. Greco, AZ | 87 | |
| CHO D.G. Chouinard, MA | 3 | | GRW D.W.E. Green, NC | 6 | |
| CST G.J. Christensen, OR | 91 | | GRI J.W. Griesé, CT | 645- | 302 |
| CLK W. Clark, MO | 279 | | *SAS C. Grunnet, Denmark | 41 | |
| CEW E.W. Clement, FL | 34 | | HK E.A. Halbach, WI | 495- | 42 |
| COD D.S. Coleman, KY | 12 | | HMR R. Ham, CO | 1320 | |
| COL P.L. Collins, MA | 208- | 1 | HAN J. Hannon, CT | 3 | |
| COM T. Cooper, S. Africa | 37 | | HRR P. Harrington, CT | 486 | |
| COT N. Cort, MA | 4 | | HAT P.M. Hartigan, MN | 300 | |
| CSD D. Costanzo, VA | 274 | | HAY E.R. Hayden, CT | 782- | 151 |
| CR T.A. Cragg, CA | 3773- | 712 | HZL L. Hazel, NY | 590- | 140 |
| CRR R.E. Crumrine, NY | 17 | | HY A.S. Heasley, OH | 40 | |
| CSO J. Csonka, IN | 52 | | HEB M.L. Hebert, IL | 3 | |
| CUN D. Cunningham, Canada | 73 | | HGA A. Hedge, CA | 14 | |
| CRY J.D. Currie, OH | 2 | | HEE E. Heiser, W. Germany | 24 | |
| DLT J.E. Dalton, CT | 7 | | HTZ M. Heitz, NJ | 347 | |
| DAN J. Danko, Hungary | 589 | | HNG G.W. Henry, OH | 167- | 1 |
| DV G. Davidson, KS | 46 | | HES C. Hesseltine, WI | 475 | |
| DAJ J. Davis, MD | 118 | | HEV Z. Hevesi, Hungary | 213 | |
| DCS L. Deicsics, Hungary | 75 | | HEY B. Heyndrickx, Belgium | 9 | |

TABLE III - AAVSO OBSERVERS 1975-76

| | | | |
|------------------------------|-----------|------------------------------|-----------|
| HE F.L. Hiett, VA | 5042 | MAA R.C. Maag, MO | 15 |
| HIN N. Higginbotham, MO | 16 | MDD P. Madden, LA | 198- 133 |
| HRI R.E. Hill, MI | 108 | MGR D.M. Magor, FL | 2 |
| HIR Y. Hirasawa, Japan | 413 | MLT T. Mallama, OH | 20 |
| HIK K. Hiroasawa, Japan | 708 | MJO J.M. Manella, MA | 1 |
| HOM J. Hoffman, MO | 6 | MCO M. Marcario, CA | 159- 10 |
| HOO G. Hoogeveen, Holland | 347 | MAF G.R. Marshall, S. Africa | 96 |
| HOP U. Hopp, W. Germany | 6051 | MAW W. Marter, MO | 22 |
| HOU D. Hough, NJ | 161 | MRX H. Marx, W. Germany | 2072 |
| HU W.S. Houston, CT | 8 | MSA A. Matecsa, Hungary | 206 |
| HUO D.J. Hughes, NV | 404 | MTM M. Mattei, MA | 14 |
| HR C.J. Hurless, OH | 3893- 658 | MTZ O. Matzek, Austria | 413 |
| HUW W. Hurst, MO | 2 | MGE G. Mavrofridis, Greece | 48 |
| ISH T. Ishihara, Japan | 146 | MYR E.H. Mayer, OH | 6032-2359 |
| ITO M. Ito, Japan | 129 | MCB R.G. McCallum, Canada | 66- 4 |
| JRM M. Jacobs, CA | 1 | MCI B.J. McInnerny, U.K. | 202 |
| JFR D. Jefferson, OH | 3 | MED K.J. Medway, U.K. | 121 |
| *SAS K.K. Jensen, Denmark | 11 | MEI R. Meier, Canada | 22 |
| JWR R.W. John, CA | 75 | MEN P.T. Menoher, CT | 136 |
| JNB B. Johnson, KS | 2 | MEZ C. Mezosi, Hungary | 316 |
| JOG G.E. Johnson | 403- 17 | *SAS Ø. Midtskogen, Denmark | 103 |
| JT R.B. Johnston, Canada | 96 | MIO E. Milotti, Italy | 6 |
| JRV R.V. Jones, NC | 37 | MTC R.C. Mitchell, WA | 6 |
| JRD D. Jordahl, PA | 36 | MZS A. Mizser, Hungary | 170 |
| KL L. Kalish, CA | 146-PEP | MCE E. Mochizuki, Japan | 11 |
| KNR R. Keenan, CA | 2 | MGJ J. Mogelinski, NJ | 911 |
| KLY G.W. Kelley, VA | 1226- 93 | MOC C. Molnar, Hungary | 36 |
| KEK K. Kelly, NM | 94- 21 | MOL J. Molnar, VA | 76 |
| KIM M. Kiehl, W. Germany | 1929 | MOR R.L. Monske, PA | 984- 8 |
| KIR P.E. Kirby, OH | 524 | MJ A.C. Montague, MI | 1720- 6 |
| KLK K. Klebert, W. Germany | 487- 15 | MM F.P. Morgan, Canada | 397 |
| KS J. Knowles, NY | 98 | MOJ J.E. Morgan, AZ | 432- 9 |
| KOC A. Kocsis, Hungary | 7 | MRR C.S. Morris, PA | 6 |
| KDF D.F. Kocyla, NY | 13 | MOW W.C. Morrison, Canada | 2074 |
| KOE E. Köhalmi, Hungary | 8 | MUC R. Mulac, OH | 409 |
| KHJ H.J. Koller, Canada | 7 | MUA R.A. Mulford, IL | 35 |
| KRS R.S. Kolman, IL | 1478- 57 | MUN C.R. Munford, U.K. | 176 |
| KLP D. Kolpanen, PA | 12 | MUR P. Murn, WI | 154- 24 |
| KMA M.A. Komorous, S. Africa | 46 | MDT D.T. Murray, PA | 16 |
| KCY D. Korycansky, MD | 124 | MYE K.J. Myers, IN | 242 |
| KOS A. Kosa-Kiss, Romania | 743 | NAY R. Nagy, Hungary | 12 |
| KOT G. Kotai, Hungary | 183 | NAM M. Naslund, Sweden | 94 |
| KRA R. Kratochwill, Austria | 23 | NEW M.V. Newberry, MI | 93- 5 |
| KRD T.N. Kridlo, PA | 267- 1 | *SAS V.G. Nielsen, Denmark | 13 |
| KIS G. Krisch, W. Germany | 1166 | NLT R. Nolthenius, AZ | 59 |
| KRK K.L. Krisciunas, IL | 204 | NBY J. Nordby, ND | 4 |
| KRO B. Krobusek, OH | 12 | OF A. Oberstatter, France | 129 |
| KGK K. Krueger, WI | 221- 2 | OBR S. O'Breza, MA | 38 |
| KRU J. Kruta, Czech. | 423 | OBP P.S. O'Brien, CA | 37 |
| KUH J.L. Kuhns, GA | 369 | OBS S.L. O'Bryne, NM | 38 |
| KUW T. Kuwabara, Japan | 560 | OCN S.D. O'Connor, Canada | 191 |
| LAM D. Lam, Canada | 189 | *SAS J.Ø. Olesen, Denmark | 150 |
| LND H.J. Landis, GA | 56-PEP | OME S. O'Meara, MA | 399- 11 |
| LGH H.A. Lange, Canada | 267 | OV E.G. Oravec, NY | 3413 |
| LAS C. Laskowski, WI | 6 | OSI L. Osi, Hungary | 23 |
| LPP M. Leppert, MO | 24 | OSD D. Osman, CA | 1 |
| LEV A.J. LeVeque, CA | 49 | OB M.D. Overbeek, S. Africa | 3975- 102 |
| LVY D.H. Levy, Canada | 764- 2 | OZR R. Ozer, CA | 2 |
| LWC C.W. Lewis, NJ | 63 | PAS S. Padilla, CA | 119- 1 |
| LNB G.C. Lindbloom, PA | 1563 | PCK E. Patrick, OH | 4 |
| LK K. Locher, Switz. | 169 | PAC C. Patterson, PA | 16 |
| LOG J. Lodge, MO | 17 | PAR R.H. Patterson, VT | 21 |
| LOT H. Louth, WA | 319-PEP | PAX G. Paxton, S. Africa | 87 |
| LX W.M. Lowder, NY | 6805 | PN A.E. Pearlmutter, MA | 250 |
| LS D. Lucas, OH | 10 | PTI N. Peattie, CA | 26 |
| LKS R. Lukas, W. Germany | 2238 | P L.C. Peltier, OH | 1275- 226 |
| LUO R.J. Luoma, NY | 10 | PFF G. Pfeiffer, W. Germany | 2688 |
| LYR R.F. Lynch, RI | 18 | POA A. Porter, RI | 75- 1 |
| LYW W. Lynk, MO | 6 | POX M. Poxon, U.K. | 500 |

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| PFJ F.J. Price, NY | 157 | | SUS D. Süßman, W. Germany | 63 | |
| PRI L.H. Price, ME | 202 | | SVN P. Sventek, IL | 335 | |
| PEP P.E. Prunty, LA | 3 | | SWE D. Swearingin, MO | 12 | |
| PUT R. Putnam, NV | 52 | | SWO A. Swoboda, MO | 5 | |
| PYE D.W. Pye, U.K. | 105- | 69 | SZG B. Szegegi, Hungary | 173 | |
| QD P.H. Quadt, NJ | 25 | | SZC B. Szentmartoni, Hung. | 569 | |
| QES T. Quesinberry, OH | 8 | | SGY S. Szilagyi, Hungary | 60 | |
| QN C.D. Quinnett, CA | 72 | | TB D. Taboada, Mexico | 90 | |
| RAM J.H. Ramser, PA | 5 | | TNV V. Tangney, WI | 2 | |
| REH D. Rehner, OH | 18 | | TYR M.J. Taylor, FL | 133 | |
| RNT C.C. Reinhart, OH | 2 | | TLA M.D. Taylor, U.K. | 172 | |
| RNN T. Renner, WI | 166- | PEP | TAY P.O. Taylor, FL | 274- | 1 |
| RIB J.L. Ribble, NJ | 3 | | TBB P. Tebbe, KS | 17 | |
| RIP M. Rippel, NM | 28 | | THM J.V. Thomas, TN | 8 | |
| ROR D.A. Rodger, Canada | 87 | | TMR R. Thomas, CA | 489- | 27 |
| RSS S.T. Roess, OH | 161- | 5 | TME M.E. Thompson, CO | 176 | |
| ROM J. Romanucci, CA | 9 | | TPR R.R. Thompson, Canada | 347 | |
| ROJ J.M. Roney, Canada | 8- | 1 | THS R.S. Thompson, FL | 554 | |
| RB D.W. Rosebrugh, FL | 563 | | TIP J. Tippins, MO | 4 | |
| RUO D. Roukonen, WI | 1319- | 2 | TIM I.M. Torreira, CT | 9 | |
| RR R.E. Royer, CA | 288- | 25 | TWN A.W. Townsend, TN | 18 | |
| RPH H. Rumball-Petre, CA | 39 | | TYS R.L. Tyson, NY | 292 | |
| SAB K.M. Sabine, CA | 818 | | TFN F.N. Traynor, Australia | 79 | |
| SAH G. Samolyk, WI | 2700 | | TRR D. Trommer, W. Germany | 613 | |
| SNL J.G. Sandel, SC | 348 | | TUB V. Tuboly, Hungary | 211 | |
| SJY J. Santa, MI | 16 | | UND E. Underhay, CA | 237- | 2 |
| SRN T.M. Sarna, IL | 529- | 2 | VAQ V. Vacquier, CA | 45 | |
| SAU M. Saunders, MO | 10 | | VAD S. Vadasz, Hungary | 50 | |
| SCC J.D. Scarl, NJ | 13 | | VLC L. Vanhoeck, Belgium | 16 | |
| SCK B. Schaefer, CO | 87 | | VNL F.R. Van Loo, Belgium | 1177- | 2 |
| SHU E. Schauer, W. Germany | 35- | 4 | VMT T. Vanmunster, Belgium | 54 | |
| SFD D. Schauf, KS | 2 | | VLM M. Villanueva, CA | 33 | |
| SMJ J.F. Scholl, NY | 1569 | | VIR P. Virag, Hungary | 229 | |
| SCE C.E. Scovill, CT | 1602- | 715 | VIS G.P. Visocki, IL | 73- | 5 |
| SHS S.B. Sharpe, Canada | 3375 | | VLJ J. Volhard, WI | 147 | |
| SSA A.P. Sharpless, FL | 11 | | VOL W. Vollman, Austria | 407 | |
| SHB C. Sherrod, AR | 1121 | | WTH T.H.N. Wales, MA | 113 | |
| SRC R. Shinkfield, Austral. | 393 | | WKR T.D. Walker, CA | 2 | |
| SID D.R. Simmons, CA | 9 | | WSW W.S. Walker, WV | 25 | |
| SKL K. Simmons, FL | 39 | | WP G. Wallerstein, WA | 1 | |
| SPN A.P. Simpson, NM | 68 | | WLL H.J. Walls, TX | 176 | |
| SKD D. Skillman, MD | 73- | PEP | WRT T. Ward, OH | 8 | |
| SKN C.R. Skinner, NJ | 21 | | WRN R. Warden, PA | 116- | 9 |
| SHA H.A. Smith, CT | 153 | | WNR R.G. Warren, IN | 6 | |
| SJ J.R. Smith, TX | 512- | 99 | WRG R.G. Watson, IN | 339- | 2 |
| SIK K. Smith, TX | 6 | | WBB W.V. Webb, OH | 643 | |
| SLD L.D. Smith, NM | 82 | | WER R.J. Weber, KS | 889- | 9 |
| SWL L. Smith, NY | 4 | | WED G. Wedemayer WI | 816 | |
| STL M.B. Smith, NM | 1892 | | WEI D.D. Weier, WI | 1702- | 341 |
| SOS R. Sos, S. Africa | 16 | | WEL D.L. Welch, Canada | 57 | |
| SOU R.G. Southwick, WA | 206 | | WEA A. Wells, MA | 242 | |
| SJZ J. Speil, Poland | 139 | | WTC J. Wetsch, ND | 4 | |
| SPC C.S. Spell, GA | 28 | | WI D.B. Williams, IL | 33 | |
| SLF L.F. Speith, CA | 35 | | WIJ D.J. Williams, NC | 104 | |
| SPO J. Spongsveen, Norway | 11 | | WLM T.R. Williams, TX | 823 | |
| SC C.E. Spratt, Canada | 120 | | WLP P. Wils, Belgium | 122 | |
| STR R.H. Stanton, CA | 209- | 143 | WJA J.A. Wilson, MO | 579 | |
| STU W.E. Staruk, MA | 16 | | WJN K.D. Wilson, MI | 39 | |
| STI P.C. Steffey, CA | 2108 | | WSN T.W. Wilson, WV | 1589- | 67 |
| SHY H.M. Steinbach, W. Ger. | 510 | | WNB B. Wingate, NJ | 962 | |
| SZH H.J. Stelzer, IL | 36 | | WTN B.C. Witten, AZ | 27- | 1 |
| SET C. Stephan, OH | 108 | | WBS R.L. Wobus, WI | 20 | |
| STF G. Stephanopoulos, Greece | 83 | | YEA R.D. Yeager, MO | 94 | |
| SIT R. Stipani, Italy | 11 | | YON R.R. Young, PA | 24 | |
| STQ N. Stoicidis, Greece | 199 | | ZAF J. Zaffi, Venezuela | 270 | |
| SYR R. Strazdas, MA | 4 | | ZAG G. Zajacz, Hungary | 598 | |
| SDT D. Strydom, S. Africa | 24 | | ZT R. Zit, WI | 293- | 15 |
| SUL C.E. Sullivan, MD | 1523- | 26 | | | |
| SUR U. Surawski, W. Ger. | 6906- | 1 | *SAS - Scandinavian Astronomisk Selskab | | |