

ANNUAL REPORT OF THE DIRECTOR
FOR FISCAL YEAR 1986-1987

It is both a pleasure and a privilege for me to present to you my 14th Annual Report as your Director. I will report on the activities of the Association in various areas of operation.

DATA MANAGEMENT

1. Processing of Current Data: Keeping the computerization and processing of the monthly incoming data are crucial to our operation, in providing up-to-date information to the astronomical community when needed. I am happy to report that the entry and processing of the monthly observations submitted by observers worldwide are up-to-date, despite the increasing number of incoming data. We are exploring the possibilities of accepting observations on diskettes and/or via phone-line from observers with computers. Being able to do this will expedite the computerization of data significantly.

2. Computerization of Archival Data Published From 1911 to 1963: Last year we hired a full-time data entry operator, Young Lim, to increase the progress on this priority project vital for the accessibility and security of these observations. 300,000 observations were keyed in and verified during this fiscal year.

Young Lim wrote a sophisticated data entry and verification computer program to allow faster data entry and to eliminate 90% of errors that can occur in keying in the data. This program, now being utilized by all our data entry transcribers, has increased the efficiency of our data entry operations significantly.

Young, who is a very conscientious, reliable, and speedy data entry transcriber, regrettably has recently moved to California. He is very interested in continuing this project from California. Thus, we have contracted with him to continue on the project, and have given him copies of 500,000 archival observations together with a computer on loan from the AAVSO. Each month, he sends in diskettes with 30,000 keyed-in and verified observations. Thus, the computerization of the archival data is progressing. Unfortunately, the two part-time students whom we had working on this project are no longer with us, so progress on the project has slowed down.

I spent August preparing a major grant proposal to the National Science Foundation for further funding of this project. If the requested grant is awarded we will be able to add additional staff and increase the rate of progress significantly.

3. Publication of Data: The second priority project, publication of 20-year light curves on individual stars in our new publication series, the **AAVSO Monographs**, is progressing well. This year we published **AAVSO Monograph 2, Light Curves of U Geminorum, 1855 - 1985**. This Monograph has been very well received by our members and astronomers. Dr. Joseph Smak, the President of Commission 42 (on Close Binary Systems) of the International Astronomical Union wrote upon the receipt of a copy of this Monograph:

"... as in the case of SS Cygni, I am really impressed with the results of your work... I wish you much success in your further work."

Dr. Richard West, the former Secretary of the International Astronomical Union, wrote upon his receipt of the Monograph:

"... I was happy to see the successful outcome of this project and also to learn that the IAU support was well used."

AAVSO MONOGRAPH 3 on the RV Tauri-type variable star R Scuti is almost ready for publication. The long-term data on 13 other stars for future publications have been extracted from our large data files and edited by computer and Mike Saladyga, our Technical Assistant. Future Monographs will be published as final checking of each data file is completed and computer-generated light curves are prepared.

SPECIAL REQUESTS FROM ASTRONOMERS FOR AAVSO DATA

The AAVSO data, our observers' astronomical contributions, continue to be sought after by astronomers and other researchers throughout the world. This year we responded to 148 requests for AAVSO data. These requests came from astronomers, researchers, students, and writers from around the world. A list of names of individuals with their affiliation and location is given in Table IV at the end of my report. Figure 1 is a histogram of the number of special requests filled each year since 1974.

The list below, and also Figure 2, show the types of variable stars for which data have been requested:

1. Cataclysmic variables (43%) - dwarf novae (29%), novae, recurrent novae, and nova-like (14%)
2. Long period variables (29%) - Mira-type (19%), semi-regular (10%)
3. R Coronae Borealis (6%)
4. The Sun (5%)
5. RV Tauri stars (4%)
6. Supernovae (4%)
7. Symbiotic Stars - Z And-type (2%)
8. Miscellaneous - Suspected variables, Cepheids, S Doradus, Irregular, gamma Cassiopeiae, Seyfert Galaxies, eclipsing binaries (7%)

The categories listed below, and also shown in Figure 3, are areas in which AAVSO data services have been used:

1. **Data Correlation (38%):** AAVSO visual data have been used to correlate photometric and spectroscopic data obtained using earth-based large telescopes, radio telescopes such as the Very Large Array (VLA) Radio Telescope, or special detectors aboard satellites such as the International Ultraviolet Explorer (IUE) and Voyager. AAVSO data have been vital in interpreting multi-wavelength results.

2. **Reference Materials (28%):** Information on variable stars and the AAVSO, light curves, and finder charts have been used in articles published in magazines such as **Sky & Telescope**, **Astronomy**, and **Signature**, newspapers such as the **Baltimore Sun** and the **Houston Record**, and in research projects on variable stars and related subjects by astronomers and students.

3. **Reporting Variable Star Observations to the Central Bureau of Astronomical Telegrams (11%):** Throughout the year up-to-date information from observers on the unusual behavior of variable stars, novae, and supernovae is reported to the Central Bureau of Astronomical Telegrams for inclusion in the **International Astronomical Union (IAU) Circulars**. Often our observers are the first to report these interesting astronomical events.

4. **Scheduling Observing Runs (11%):** We assisted astronomers in scheduling observing runs with earth-based telescopes at observatories such as Kitt Peak and McDonald, radio telescopes such as the Very Large Array (VLA) Radio Telescope, and with instruments aboard satellites such as the International Ultraviolet Explorer (IUE), Voyager, and the

High Precision Parallax Collecting Satellite (HIPPARCOS). Some of the observing targets for these observing runs have been long period variables (Mira and semiregular variables), Seyfert galaxies with known variability, cataclysmic variables such as EX Hydrae, SU Ursae Majoris, Z Camelopardalis, and YZ Cancri, and symbiotic stars such as Z Andromedae.

5. **Simultaneous Monitoring of Observing Targets (6%):** Our observers provide a unique service to astronomers during their observing runs with earth-based telescopes at Kitt Peak, McDonald, and Lowell Observatories, radio telescopes such as the VLA, and with special detectors aboard satellites such as the IUE. The observational information we provided for eight observing runs was crucial to the success of these runs.

6. **Science Projects (5%):** We provided data and guidance to college and high school students for their science projects.

7. **Data Analysis (1%):** We provided data on semiregular, RV Tauri, and dwarf novae variables for analysis of chaos in variable star behavior.

The following are some examples of the requests that we have received:

Dr. Mark Slovak was observing T Leonis in January at McDonald Observatory in Texas when he noticed small-amplitude, periodic variations in the high-speed photometric data. The light curve looked like the superhumps of an SU UMA-type cataclysmic variable. He immediately called HQ to ask if T Leo was behaving unusually. Just that morning I had received phone calls from observers alerting me that T Leo was having a very bright outburst. When I relayed this information to Dr. Slovak, it became apparent that this star was in fact undergoing a superoutburst. T Leo can now be identified as an SU UMA star because of the presence of superhumps during its superoutbursts.

Dr. Valentine Bujarrabal from Spain wrote that he and his colleagues have been observing radio emission from long period variables for the past several years. They have been monitoring the time variations of SiO masers from 14 long period variables (LPV) every three weeks, and they have obtained very striking results. He wrote, "We think they represent a corner stone for the understanding of long period stellar variations." In order to interpret their results they needed to compare the strong SiO variations with the optical light curves. Thus they needed the light curves of these 14 LPV's from 1982 to 1987.

Dr. William Glaccum of NASA, observing in the infrared S-type long period carbon stars, wrote to say that his recent data indicated a new dust emission feature in the 20-65 micron region of the electromagnetic spectrum. He is now fitting theoretical models to his IR data, and needed to know what the stars he observed were doing during his observing run.

Dr. Gail Reichert, also of NASA, needed our data on the Seyfert galaxy NGC 4151 to determine its variability in order to schedule ultraviolet and far-ultraviolet observations with the IUE and Voyager satellites.

Dr. Gerald Fishman, also of NASA, had a curious request. He was interested in our solar flare data. He was interested in finding out whether gamma bursters have an effect on ionospheric activity, which our solar flare observers monitor.

Dr. Paula Szkody has once again included me, representing the

AAVSO, as a consultant to her NASA project. We will be correlating the ultraviolet data from IUE satellite with the AAVSO optical data on cataclysmic variables during their quiescence.

One of the exciting projects that we collaborated on was the observing run of YZ Cancri with the IUE. Dr. Janet Drew and Frank Verbunt were interested to observe this star in the UV from the start to the end of its outburst in the last half of February. They requested that we predict its outburst for that time so that they could travel to the IUE Station in Spain to monitor the UV observations during the outburst time. Using recent data from our observers I predicted the outburst to occur in the first five days of March. The astronomers changed their travel schedule from late February to early March. On March 1 they went to Spain to wait for our call alerting them to start the IUE observing. Our observers worldwide were alerted to keep a vigil.

On March 3 at 7:30 PM EST, Gerry Dyck of Massachusetts called to say YZ Cnc had just started to come up. In Spain Dr. Drew was waiting anxiously in her hotel room for our call. When I called at 12:45 AM Spain time she was thrilled to hear the news. She asked me to call the IUE station in Spain at midnight our time with further information. As our members were calling continuously, I was able to update the astronomers later. All the schedules were revised at the IUE station and within 24 hours YZ Cancri was being monitored continuously. Throughout the outburst our observers from around the world, such as Steve Lubbock from England and Sei-ichi Sakuma from Japan, called to give us the most up-to-date information. The star started to fade on March 5. The astronomers obtained probably the first set of IUE data taken during a short outburst of YZ Cancri. Since these short outbursts last only two or three nights at most, to be able to schedule and observe a narrow outburst is a real challenge and astronomical victory only to be won with the help of the dedicated observers of the AAVSO!

Dr. Edward Robinson from University of Texas had an observing run at McDonald Observatory. He wished to be alerted to the outbursts of a number of dwarf novae. Gerry Dyck kept a vigil on these and other dwarf novae and had very valuable data for Dr. Robinson. Later Ed Robinson wrote:

"...I want to thank you for the invaluable help you gave...during our observing run on the 107 inch telescope at McDonald Observatory. The specific goal of the run was to make radial velocity measurements of erupting dwarf novae. The radial velocity curves of the white dwarfs in cataclysmic variables are normally measured from the emission lines coming from the accretion disk around the white dwarf. We know these radial velocity curves are biased, but we do not know how serious the biases are nor whether we can correct for them. We hope to estimate the extent of the biases by measuring the radial velocity curves of dwarf novae when they are erupting when the emission lines turn into absorption lines.

"It is impossible for us to monitor dwarf novae for eruptions ourselves so we are totally dependent on amateur astronomers to tell us which dwarf novae are erupting. Your help was particularly useful because the only erupting dwarf nova that was suitable for our program was not on the original list...we observed it only because you brought it to our attention."

Dr. Ronald Kaitchuk had an observing run at Lowell Observatory during which he wanted to observe dwarf novae at outburst spectroscopically. The assistance of our observers was once again crucial. Dr. Kaitchuk later wrote:

"I want to thank you and your observers for the wonderful support you gave me during my...observing run. It was clear every night and I obtained good spectroscopic coverage of the SS Cygni outburst. It was indeed a slow outburst at the beginning, but it then shot up to maxima in less than one day...The spectrum was different every night."

We had an interesting visit from Dr. Michel Grenon, a Swiss astronomer I met at the IAU Colloquium 98 in Paris last summer. Dr. Grenon is a member of the Input Catalogue Consortium of the European astrometric satellite HIPPARCOS, scheduled to be launched in 1989. The Consortium is preparing the catalogue of about 100,000 objects, some of which are large-amplitude variable stars, that will be observed with HIPPARCOS. The Consortium is very interested in collaborating with us, and in analyzing our data on long period variables. Dr. Grenon wrote:

"A specific aspect of the 'HIPPARCOS' mission is that the observing programme has to be completely defined in advance in order to obtain uniform sky coverage...At each field of view crossing, the expected accuracy on the relative position is reached if an adequate observing time allocation has been made. This observing time is a strict and steep function of the star magnitude...A special problem arises with long period and large amplitude variable stars representing about 1% of the whole HIPPARCOS program. It is necessary for us to predict the observability windows for these stars, i.e the periods when these stars are brighter than the detection threshold, and the magnitude during the next field crossing...The amplitude and phases of long period variables are generally not strictly periodic and they need to be redefined, or at least checked, before and during mission...The only possibility to surmount this difficulty is to request the collaboration of amateur associations, in particular the AAVSO, which possesses by far the largest amount of data and of HIPPARCOS stars on its programme."

What Dr. Grenon and his colleagues plan to do is, by applying simplified Fourier transforms to long-term, computer-readable AAVSO data on long period variables, predict the brightness of these stars during the HIPPARCOS Mission. Dr. Grenon and I discussed at length how our data are arranged and how we can best be of assistance to the Consortium. He was much impressed with our operation, data management, and long-term data files, extending back decades and on some stars even centuries, and he described how our help is vital to the HIPPARCOS Mission. The Consortium also invited me to attend a special HIPPARCOS Colloquium entitled, "Scientific Aspect of the Input Catalogue Preparation - II", to be held in Spain in January, and requested that I present a paper on the AAVSO and our data on large-amplitude stars. We are happy to be of help to this pioneering and important mission.

ASTRONOMICAL HIGHLIGHTS

This year there was significant stellar activity. Highlights of this activity are summarized below:

1. Mini-outburst of GK Persei.
2. Fading of the R Coronae Borealis-type star SU Tauri.
3. Rare superoutbursts of the SU Ursae Majoris-type dwarf novae T Leo, EX Hydrae, and DX Andromedae.
4. Outburst of recurrent nova U Scorpii.
5. Outburst of V394 Coronae Austrinae (Nova CrA 1949), detected by William Liller, with its resulting reclassification as a recurrent nova.
6. A very bright maximum of Mira.

7. Discovery of 5 novae:
 - Nova Centauri 1986 by Robert H. McNaught on November 22;
 - Nova Andromedae 1986 by M. Suzuki on December 5;
 - Nova Herculis 1987 by M. Sugano and M. Honda on January 25;
 - Nova Sagittarii 1987 by Robert H. McNaught on May 18;
 - Nova in the Large Magellanic Cloud (LMC) by Gordon Garrard, September 21.
8. Visual discovery of 3 extragalactic supernovae:
 - Supernova 1986L in NGC 1559 by Robert Evans on October 7;
 - Supernova 1987B in NGC 5850 by Robert Evans on February 24;
 - Supernova 1987L in NGC 2336 by James Dana Patchick on August 16.
9. Discovery of the brightest extragalactic supernova since 1604, in the LMC, Supernova 1987A, by Ian Shelton on February 23, 1987, and independently and visually discovered by Oscar Du Halde and Albert Jones.

SUMMARY OF OBSERVATIONS

As always, our observers' enthusiasm, dedication, and devotion to variable star astronomy continue to amaze and impress us. In the past few years the number of observations received has increased quite significantly.

We received 265,473 observations from 521 observers during the fiscal year 1986-1987. This is largest number of observations received at HQ in one year. These totals include 113,330 observations from 239 observers in 37 states of the United States and 152,143 observations from 282 observers in 35 countries. Massachusetts with 17 observers and 21,166 observations, New York with 18 observers and 12,860 observations, and Colorado with 4 observers and 8,450 observations are the leading States of the United States, while France with 43 observers and 32,535 observations, South Africa with 17 observers and 18,476 observations, and Hungary with 44 observers and 15,360 observations lead the countries abroad. The totals include 41 adjusted observations of Orion variables, where ten observations are counted as one.

The grand total of observations recorded since the founding of the AAVSO in 1911 is 5,919,920.

Table I lists the number of observers and the total observational contributions from each country for this year. Table II gives the same information for each State in the USA. Table III is an alphabetical list of observers, giving each person's observing initials, name, location, annual total of observations, and total of inner sanctum observations (magnitude 13.8 or fainter, and/or "fainter than" 14.0 or fainter).

This year 30 observers reported between 1000 and 2000 observations, 11 between 2000 and 3000, 9 between 3000 and 4000, 6 between 4000 and 5000, 2 between 5000 and 6000, and 3 between 6000 and 7000. Michael Moeller (West Germany) contributed 7,222 observations, Marvin Baldwin (Indiana) 7,926, Gerald Dyck (Massachusetts) 12,399, and Danie Overbeek (South Africa) 13,682.

Gerald Dyck sent in the highest number of inner sanctum observations with 7,183 (58% of his annual totals), followed by Michel Verdenet with 2,661 and Glenn Chaple with 1,908.

Since the establishment of the AAVSO Photoelectric Photometry Observing Program in 1983, we have been receiving more and more photoelectric data from our photoelectric photometrists. This year we received 2,388 photoelectric observations from 20 photometrists, on stars in the program and also on eclipsing binaries. This is the

largest number of photoelectric data we have received in a year and also the largest number of participants.

My sincere thanks to each of our untiring, dedicated, and enthusiastic observers for their valuable astronomical contributions. Each observer's observations, whether one or hundreds, are very much valued and appreciated and help to tell the 'Story of Variable Stars.'

My special thanks to observers who telephone Headquarters with up-to-date information on the unusual behavior of some of the variable stars, and to observers who participate in observing programs as requested by astronomers.

INTERNATIONAL COOPERATION

Our cooperation continues with major variable star groups around the world. The number of contributing observers and observations from abroad has increased significantly in recent years. Variable star associations in France, the Netherlands, Hungary, South Africa, and Scandinavia submit their observations as a unit to the AAVSO so that their data can be processed and made available to the astronomical community together with ours. In addition, many observers abroad send their observations to the AAVSO individually.

We continue to receive valuable data from members of the Variable Star Section of the Royal Astronomical Society of New Zealand, compiled by Gordon Smith and recently computerized, and kindly sent by Director Dr. Frank Bateson. These data on southern long period variables help immensely in refining the annual predictions of these stars. Dr. Bateson, Mr. Douglas Saw, Director of the Variable Star Section of the British Astronomical Association, and Mr. Aare Kellomaki, Director of the Scandinavian Variable Star Observers, disseminate to their observers the information in the **AAVSO Bulletin** of the predicted maxima and minima dates of long period variables.

Members of the following variable star associations sent in observations to the AAVSO either individually or as a group for inclusion in our data files for processing and publication: Association Française des Observateurs d'Étoiles Variables (France); Astronomical Society of Southern Africa, Variable Star Section; Astronomischer Jugendclub (Austria); Berliner Arbeitsgemeinschaft für Veranderliche Sterne (West Germany); British Astronomical Association, Variable Star Section (England); British Astronomical Association of New South Wales (Australia); Japan Astronomical Study Association; Nederlandse Vereniging Voor Weer-en Sterrenkunde, Werkgroep Veranderlijke Sterren (Netherlands); Norsk Astronomisk Selskap, Variable Stjernergruppen (Norway); Planetario e Observatorio Astronomico do Colegio Estadual do Parana (Brazil); Pleione Valtozocsillageszlelo Halozat (Hungary); Red de Observadores de Estrellas Variables - MIRA (Spain); Royal Astronomical Society of Canada; Scandinavian Astronomisk Selskap; Uniao Brasileira de Astronomia, Variable Star Commission (Brazil); and Vereniging Voor Sterrenkunde, Werkgroep Veranderlijke Sterren (Belgium). We acknowledge with thanks and appreciation the valuable astronomical contributions from members of these groups.

We exchange literature with observatories, universities, and colleges around the world.

In order to increase international cooperation and participation, we have started a new program for which we will invite a member/observer from abroad to our Annual Meeting each year with expenses paid from proceeds of a raffle we will have at these meetings. John Bortle, who himself was invited to attend a meeting in Japan and who found the experience most rewarding, suggested the program, and we thought the raffle idea may be a way to accomplish this.

(Editor's note -- the raffle at this Annual Meeting was extremely successful, and a member/observer will be invited to attend the Annual Meeting in October 1988.)

MEMBERSHIP

This year, at the 75th Annual Meeting in Cambridge, Massachusetts, and at the 76th Spring Meeting in San Francisco, California, we elected 182 new members. Of these, 139 joined as Adult-Annual, 31 as Junior-Annual, 5 as Sustaining, and 7 as Sponsored members. We elected Dorrit Hoffleit and Frank Bateson as Honorary members.

This year, 59 members changed their membership from Annual to Sustaining, thus supporting the operation of the Association doubly with their dues.

AAVSO PUBLICATIONS

The following have been published by the AAVSO during this fiscal year:

The Journal of the AAVSO, Volume 15, No.1; Volume 15, No.2 (75th Anniversary Issue); Volume 16, No. 1, edited by Charles A. Whitney, prepared by Elizabeth O. Waagen, Mary Greene, and Susan Robinson.

The preparation of the special 75th Anniversary Issue took a major amount of staff time this year. We can all be proud of this 300-page publication, a treasure trove filled with excellent scientific, historical, and organizational papers. The major funding for this publication came from the members of the American Astronomical Society - that is, professional astronomers - through an appeal made to the members of this Society by Dr. Charles Whitney, Editor of the **Journal**. The overwhelming support of the professional astronomical community is an endorsement of the excellent reputation of the AAVSO.

AAVSO Bulletin 50 - Predicted maxima and minima dates for 1987 of 397 long period variables, prepared by Janet A. Mattei. Charles M. Jones, AAVSO's Margaret W. Mayall Assistant, made further revisions to the computer program that he had written earlier which has enabled me to reduce the preparation of this Bulletin by 50%.

AAVSO Circular, No. 192 to 203, edited and published by John E. Bortle and Charles E. Scovil.

AAVSO Alert Notices, No. 85 to 97, prepared by Janet A. Mattei. The number of subscribers to this publication has doubled this year, to 450.

Ephemerides of Eclipsing Binary and RR Lyrae Stars for 1987, prepared by Gerard Samolyk and Marvin Baldwin.

AAVSO Photoelectric Photometry Newsletter, Volume 7, No. 2 and 3, edited by John R. Percy.

AAVSO Solar Bulletin, Volume 41, No. 3 to Volume 43, No. 8, edited by Peter O. Taylor, and assisted in preparation by Michael Saladyga.

AAVSO Newsletter, No. 1 and 2. This new publication from Headquarters was started for the purpose of sharing news from members and Headquarters and ideas among members. Members' participation and contribution are very much encouraged and needed.

My sincere thanks to Marvin E. Baldwin, John E. Bortle, Mary

Greene, John R. Percy, Susan Robinson, Michael Saladyga, Gerard Samolyk, Charles E. Scovil, Peter O. Taylor, Elizabeth O. Waagen, and Charles A. Whitney for the contribution of their time, wisdom, and talents in the preparation of the above AAVSO publications.

OTHER PUBLICATIONS WITH AAVSO PARTICIPATION

Predicted maxima and minima dates of bright long-period variables, together with ephemeris of a few easy-to-observe stars together with an article on R Leonis, was published by Janet A. Mattei in the **1987 Observers' Handbook** of the Royal Astronomical Society of Canada.

Monthly predictions of maxima dates of bright long period variables were published by Janet A. Mattei in **Sky & Telescope** magazine.

Elizabeth O. Waagen and Janet A. Mattei of HQ staff, and members Emilia Belserene, Robert Garrison, Russell Genet, Mart de Groot, Edward Guinan, John Percy, Douglas Welch, David Williams, Lee Anne Willson, and Robert Wing contributed articles to the book containing the papers presented at the meeting held in Toronto, Canada, entitled, **The Study of Variable Stars with Small Telescopes**.

"Detection of Superhumps and Quasi-periodic Oscillations in the Light Curve of the Dwarf Nova SW Ursae Majoris," co-authored by Edward Robinson, Allan Shafter, J. Hill, and Matthew Wood, and Janet Mattei, was published in the **Astrophysical Journal**, Vol. 313.

The AAVSO Duplicate-Book Auction was enthusiastically supported by members and was extremely successful. Ninety-eight percent of the books were auctioned off by mail to the highest bidders, bringing approximately \$3000 to the Association. My thanks to Mike Saladyga who thought of the idea as he was arranging our library in our new Headquarters, and who carried out this project very successfully.

MEETINGS ATTENDED AND TALKS GIVEN ON BEHALF OF THE AAVSO

It is always a delight for me to give talks on the AAVSO and variable stars, to spread the word on how observers can make significant contributions in variable star astronomy. This year I gave talks at the following meetings and conventions:

The Riverside Telescope Makers Convention, in Riverside, California. My talk on the topic of "The Contribution of Amateur Astronomers to Space Science" to an audience of over 1000 astronomy enthusiasts was received with much interest. One of the attendees wrote: "...I heard you at Riverside this year and I was much in awe as you told the history of the AAVSO and the dedication of its members to variable star astronomy".

International Union (IAU) Colloquium 98 on "The Contribution of Amateur Astronomers to Astronomy," in Paris, France, in celebration of the 100th Anniversary of the Societe Astronomique de France. I gave an invited talk on the topic of "Contributions of Amateur Astronomers to Variable Star Astronomy." More detailed information on this excellent meeting is given on page 134.

Variable Star Day in Leiden, the Netherlands, at Leiden Observatory on June 27, right after IAU Colloquium 98, for the Dutch and Belgian variable star observers. Thomas R. Williams, AAVSO President, gave a talk on the organizational aspects of the Association. I gave a talk entitled, "From Observations to

Publication," describing what happens to the observations from their receipt at Headquarters to their publication. A detailed account of this meeting is on page 139.

The British Astronomical Association's July Meeting in London, England, following the meeting in Leiden. There I gave a talk on the organizational and scientific activities of the AAVSO. A more detailed account of this meeting is on page 134.

PERSONNEL AT HEADQUARTERS

A group of people who deserve a lot of credit are the staff at Headquarters. We are extremely fortunate to have a staff that is efficient, hardworking, conscientious, and team-spirited.

Regrettably for us, several of our staff members either graduated and left the AAVSO, or left when they started graduate school. Michael Saladyga, our technical assistant for the preparation of the Monographs, left to attend graduate studies at Brandeis University. Charles M. Jones, the AAVSO's Margaret Mayall Assistant, responsible for computer program development in our office for the past four years, graduated with Honors from Massachusetts Institute of Technology, and left to work in New York. Michael Bickford and Gabriel Menchaca, our part-time data entry technicians, left for other positions closer to their schools. Young Lim, our archival data entry technician, moved to California. However, he was contracted with by the Association to continue the computerization of the archival data.

A tragic loss to Headquarters was the death of Dorothy Haviland. Dot had been with the AAVSO for twelve years, and passed away in August after a short illness. Dot handled the membership files for many years and was familiar with all of the members, handling the paperwork with a personal dedication and attention which will be sorely missed. She was a truly devoted staff person, and cared about the members of the AAVSO.

Although we have had to adjust to a drastically reduced staff this year, we have also had the good fortune to add one full-time staff person during the summer as an Administrative Assistant, Susan Robinson.

As of the present time, our staff consists of: Elizabeth O. Waagen, my Senior Technical Assistant, Mary Greene, our Office Manager, Susan Robinson, our Administrative Assistant, Janet C. MacLennan, Special Projects Correspondance Secretary (part-time), Margarita Vargas and Barbara Silva, Data Entry Technicians, Young Lim, contracted Archival Data Entry Technician, and Katherine Hazen, Frank McPherson, and George Raymond, our volunteer assistants to whom we are grateful for their generous donation of their time and wisdom.

My special thanks to all the staff, without whom I could not do my job as Director.

ACKNOWLEDGEMENTS

We wish to express our heartfelt gratitude to Dr. Clinton B. Ford for providing us with a permanent Headquarters. We continue to enjoy the benefits of his generosity as we use our Headquarters for many projects. It was a pleasure to be able to host the Fall Meeting using our own facilities.

The AAVSO was fortunate to have Edward Halbach and Roy Lee return to Headquarters this past year to build shelves for our downstairs meeting and periodical room. We appreciate the time they contributed

to this effort.

My sincere thanks to our local members, Gerry Dyck and Keith Danskin, who return to Headquarters time and again to offer us valuable assistance and advice. Similarly, I wish to thank Martha Hazen for her valuable suggestions on scientific and organizational matters.

The AAVSO has been very fortunate to receive generous financial support from individual members and institutions. We appreciate the dedication and active support of the following contributors:

AAVSO members who have given generously to our fundraising campaign, helping us to make progress on our priority projects, develop and grow as an organization, as well as maintain the many services and programs we offer;

AAVSO members who have become Sustaining Members, thus increasing their level of support to help with our operations;

The Smithsonian Astronomical Observatory for granting us valuable computer time through the vigorous efforts of Prof. Owen Gingerich and Barbara Welther. This allows us to process our constantly growing volume of monthly data, as well as prepare the data for publication;

The National Oceanic and Atmospheric Administration (NOAA), for the yearly grant which supports our Solar Division;

The Kenilworth Foundation, for their grant to assist with general operations, reflecting their confidence in our work which we greatly appreciate;

Erindale College, University of Toronto, for funding the printing and distribution of the **Photoelectric Photometry Newsletter**, and the Canadian Ministry of Employment and Immigration for funding the analysis of the Cepheid observations in the salary of Keith Marcus. I sincerely thank John Percy who obtained both of these fundings for us.

Our thanks go to the Stamford Museum for allowing Charles Scovil and John Griese to use the 22-inch telescope at Stamford Observatory for variable star observations, and for Charles Scovil to use the Museum's facilities in preparing charts, the **AAVSO Circular**, and the revision of the **AAVSO Atlas**.

We are grateful to Drs. Michel Grenon, Richard Stanton, and Ronald Zissell for obtaining photoelectric sequences of comparison stars for some of our variable star fields. We also thank Dr. Zissell for allowing Gerald Dyck to use the 18-inch refractor at Amherst College for his observing, and for providing valuable assistance during these observing runs.

My personal thanks go to my husband, Mike, for his continuing support and understanding, and valuable suggestions.

My special thanks to our dedicated Committee Chairmen, Council Members, and Officers, in particular our President, Treasurer, and Secretary for the generous contribution of their time, wisdom, and energy in furthering the operation of the Association and its many programs.

My very sincere thanks to all our members and observers, for their support and vital astronomical and financial contributions that have made the accomplishments of this year possible.

Janet Akyüz Mattei
Director

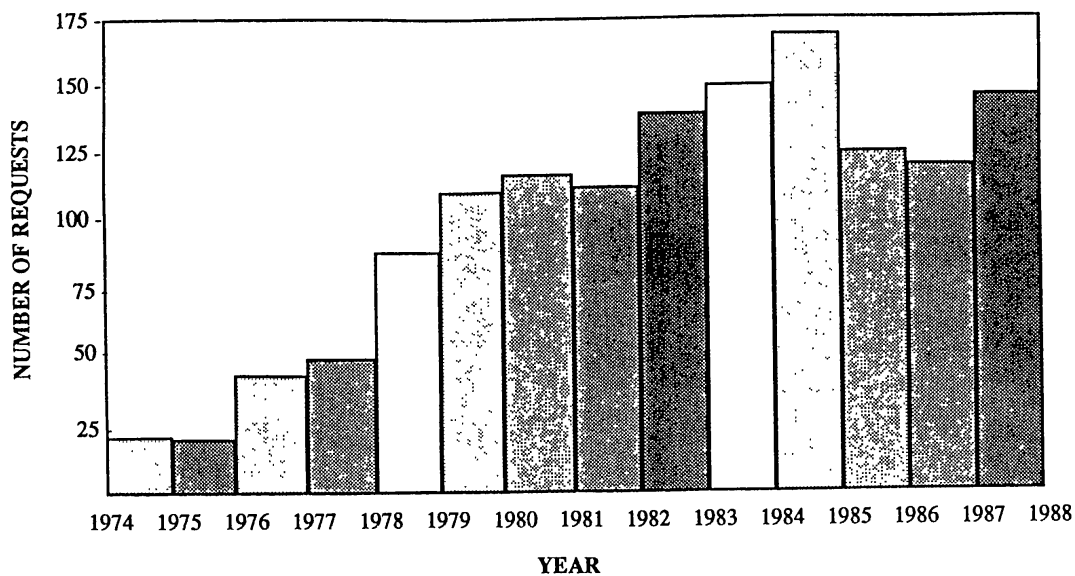


Figure 1. Number of requests from astronomers for AAVSO data filled each year since 1974.

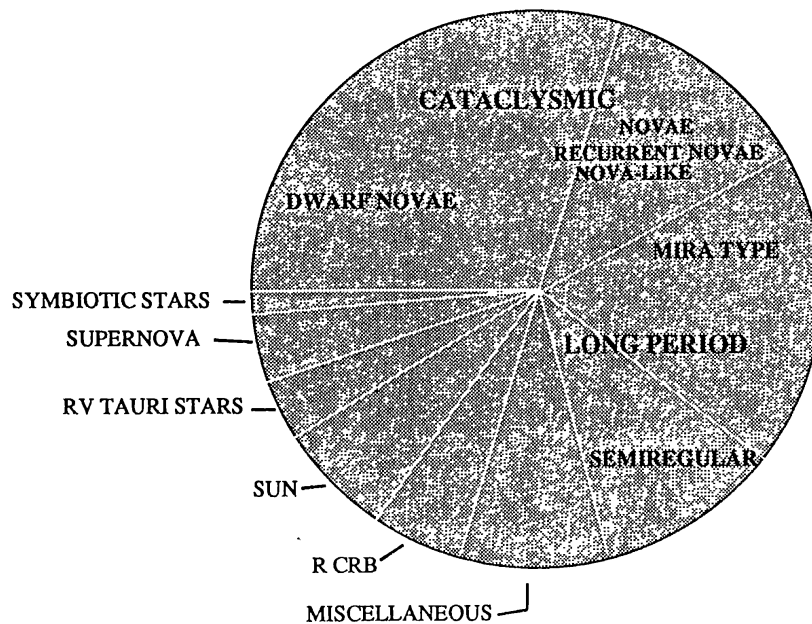


Figure 2. Types of variable stars for which AAVSO data were requested in fiscal 1986 - 1987.

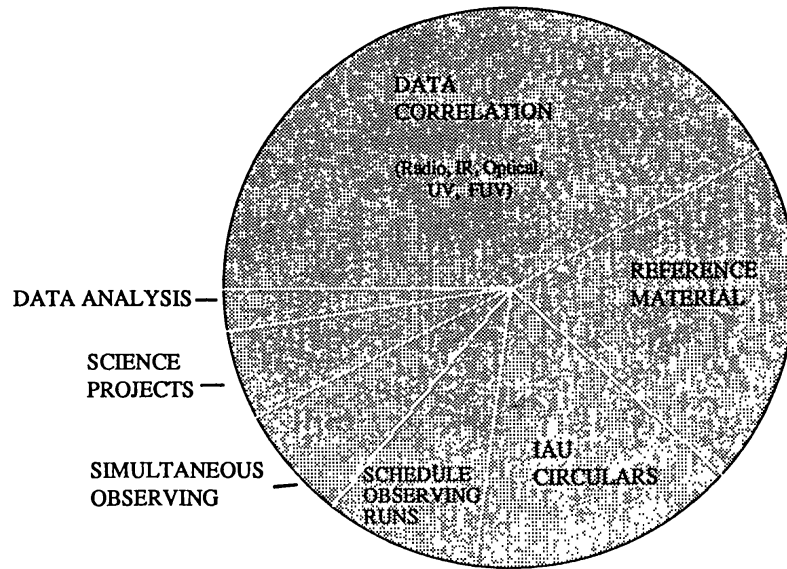


Figure 3. Areas in which AAVSO services were used by astronomers in fiscal 1986 - 1987.

TABLE I

Observer Totals by Country

Country	Number of Observers	Total of Observations	Country	Number of Observers	Total of Observations
Argentina	19	1457	Japan	5	4860
Australia	8	3330	Malta	1	141
Austria	3	941	Netherlands	20	8428
Belgium	11	3699	New Zealand	1	368
Brazil	3	588	Norway	12	9161
Canada	26	11742	Poland	1	775
Costa Rica	1	11	Portugal	2	506
Czechoslovakia	2	331	Romania	3	3633
Denmark	6	438	Scotland	1	17
England	5	6069	South Africa	17	18476
Fiji	1	4	Spain	6	4203
Finland	1	4489	Switzerland	1	352
France	43	32535	Turkey	1	81
Germany (FRG)	15	14077	U. S. A.	239	112423
Germany (GDR)	1	437	Venezuela	1	278
Greece	2	592	Yugoslavia	2	141
Haiti	1	582	Zimbabwe	<u>4</u>	<u>1555</u>
Hungary	44	15360	TOTAL	521	264566
Italy	12	2486			

TABLE II

U. S. A. Observer Totals by State

State	Number of Observers	Total of Observations	State	Number of Observers	Total of Observations
Arizona (AZ)	11	3740	New Hampshire (NH)	2	62
Arkansas (AR)	2	132	New Jersey (NJ)	7	3119
California (CA)	24	3815	New Mexico (NM)	1	23
Colorado (CO)	4	8450	New York (NY)	18	12860
Connecticut (CT)	17	5269	North Carolina (NC)	1	637
Florida (FL)	9	3644	Ohio (OH)	13	2685
Georgia (GA)	3	163	Oklahoma (OK)	2	74
Hawaii (HI)	2	4361	Oregon (OR)	1	78
Illinois (IL)	14	6307	Pennsylvania (PA)	7	2344
Indiana (IN)	7	8263	Rhode Island (RI)	3	530
Iowa (IA)	1	20	South Carolina (SC)	2	830
Kansas (KS)	2	116	Tennessee (TN)	2	22
Louisiana (LA)	3	284	Texas (TX)	11	4661
Maine (ME)	5	781	Vermont (VT)	2	550
Maryland (MD)	6	2385	Virginia (VA)	4	4073
Massachusetts (MA)	17	20259	Washington (WA)	7	2068
Michigan (MI)	6	989	West Virginia (WV)	3	503
Minnesota (MN)	7	2578	Wisconsin (WI)	<u>10</u>	<u>5632</u>
Missouri (MO)	3	116	TOTAL	239	112423

TABLE III

AAVSO OBSERVERS 1986 - 1987

AAP A. P. ABBOTT, CANADA	524-	8	BTK A. W. BUTTRICK JR., CT	2
ABT T. ABRRAHAMSEN, NORWAY	25		CPX P. CALVO, ARGENTINA	33
AD R. M. ADAMS, MA	475-	96	CJA J.D.S.CAMPOS, S. AFRICA	314
AB W. B. ALBRECHT, HI	4322-	122	CIA L. CAMURRI, ITALY	58
ADT D.ALTEWEIER,F.R.GERMANY	177		CW W. H. CARINI, NY	41
AAA A. A. ALVES, BRAZIL	291		CAH H. J. CARNEY, FL	13
AMO M. AMORETTI, ITALY	5		CJW J. CARRIZO, ARGENTINA	17
AJ J. A. ANDERER, AR	4		CJR J. CARUSO, CT	10- 1
AOD O. ANDERSEN, NORWAY	170		CDO L. A. CASCARDO, OH	3
ARI R. B. ARIAIL, SC	828-	222	CJZ J. CERAR, YUGOSLAVIA	95
ARB B. R. ARNOLD, OH	33		CCN R.CHACONDIAZ,VENEZUELA	278
ARN*L. ARNOLD, FRANCE	316-	109	CGF G. F. CHAPLE JR., MA	6063-1908
ASH S. M. ASHE, CO	13-	2	TCE*E.CIFUENTES-TORRES,SPAIN	549
AKT T. W. ATKIN, HAITI	582-	1	CLK W. E. CLARK, MO	56
ATW P. ATWOOD, CA	1319		CLG L. CLUYSE, BELGIUM	702- 47
AUB*J. AUBAUD, FRANCE	289		CMX M. R. COFFEY, NY	8
ADE D. E. AUCOIN JR., ME	6		CMJ M. J. COLLINS, ENGLAND	114
BAC W. B. BACHELOR, MD	10		COL P. L. COLLINS, AZ	426- 14
BOZ~B. BAGO, HUNGARY	103-	11	CMG&G. COMELLO,NETHERLANDS	1346- 225
BZJ~J. BALAZS, HUNGARY	4		CGG G. CONLIN, WA	500
BM M. E. BALDWIN, IN	7926		CJC J. COOK, S. AFRICA	5
BVE&E.BALLEGROY,NETHERLANDS	250		COO L. M. COOK, CA	492- 89
BSF S. F. BARNHART, OH	95-	15	CK S. P. COOK, AR	128
BSR S. BARONI, ITALY	699		COM T. COOPER, S. AFRICA	2565- 20
BB R. S. BATES, MA	108		CGA G. A. CORRIERI II, ME	2
BBA B. B. BEAMAN, IL	132-	21	COA A. COULOMBE, CANADA	162
BKK K. C. BECKMANN, IN	7		CLX L. B. COX, CANADA	152- 34
BPJ P. J. BECKMANN, MN	40		CR T. A. CRAGG, AUSTRALIA	3055- 871
BJS J. R. BEDIENT, MN	108		CG G. CRAWFORD, CANADA	8
BGY M. BEGBIE, ZIMBABWE	99		CRR R. E. CRUMRINE, NY	42- 1
BTY T. BENNER, PA	859-	322	CZE~E. CSISZAR, HUNGARY	40
BBE~B. BERENTE, HUNGARY	6		CZT~T. CSISZAR, HUNGARY	32
BJK J. BERMAN, MA	12-	1	CSI~I. CSOTI, HUNGARY	46
BML M. L. BERNSTROM, MN	1527-	868	CSM M. CSUKAS, ROMANIA	1147
BIO*P. BERRIOT, FRANCE	142		CSW W. H. CUMMINS, OH	5- 1
BIC*L. BICHON, FRANCE	2779		DOC~C. DANKO, HUNGARY	20
BIL G. A. BILODEAU, CA	8-	4	DN P. DARNELL, DENMARK	13
BKN A. J. BIRKNER, IL	318		DSL L. A. L. DASILVA,BRAZIL	27
BKL J. A. BLACKWELL, MA	12		DYJ*J. DAUBY, FRANCE	219- 1
BMN R. M. BLAKE, CANADA	11		DV G. A. DAVIDSON, KS	28
BMC M.D.C. BOADAS,ARGENTINA	7		DRE A. DE LA ROSA JR., TX	208
BAX A. BOATTINI, ITALY	56		DB I. DEBONO, AUSTRALIA	2
BOH D. BOHME, GERMAN D.R.	437		DBF F. DEBOOSERE, BELGIUM	109
BFK&F. BOINCK, NETHERLANDS	144		DLC C. DELUCA, AUSTRALIA	2
BVL*M. BONNEVILLE, FRANCE	46-	1	DEA R. DEMARTINO, CT	12
BRJ J. E. BORTLE, NY	2618-	850	DPA A. DIEPVENS, BELGIUM	976- 9
BJT J. E. BORTLE, NY	22		DIN R. DINARDO, NY	30
BMU&M. BOUMA, NETHERLANDS	893-	31	DPL P. L. DOMBROWSKI, CT	666- 89
BRG B. J. BOURGEOIS, TX	24		GDB~G. DOMENY, HUNGARY	398
BDS R. R. BOYD, CA	19		DZS S. DOMINGUEZ, ARGENTINA	78
BYS S. W. BRADLEY, OH	6		DAG A. DREDGE, S. AFRICA	101
BRF R. F. BRADY, GA	18		DUS*R. DUBOIS, FRANCE	178
BDT D. W. BRANCHETT, FL	55		DMO*M. DUMONT, FRANCE	399
BTB T. C. BRETL, MN	137-	34	DUP*M. DUPASQUIER, FRANCE	1336- 53
BSM S. M. BRINCAT, MALTA	141		DGP G. P. DYCK, MA	12399-7183
BCS C. F. BROWN, CANADA	11		EBG S. EDBERG, CA	1
BBT R. R. BROWNING, NJ	701		EIE C. J. EIERS, CA	41
BOA*A. BRUNO, FRANCE	32-	4	EL J. E. ELLERBE, SPAIN	414

TABLE III (cont'd)

AAVSO OBSERVERS 1986 - 1987

ELW S. J. ELWIN, AUSTRALIA	62		HVG V. HANSTEEN, NORWAY	7	
EMG S. EMIG, WA	21		HRR P. HARRINGTON, NY	15	
EJL J. L. EVERAERT, BELGIUM	22		HKM K. M. HARTMANN, NY	3	
FCA C. A. FAUSEL, MI	101		HAV R. P. HARVAN, MD	1006-	1
FJH&H. FEIJTH, NETHERLANDS	3541-	919	HSB W. HASUBICK, F.R.GERMANY	1527-	11
FJL J. L. FERREIRA, CA	11		HDO~M. D. HAVASSY, HUNGARY	9	
FET T. I. FETTERMAN, NJ	23		HAB R. H. HAYS JR., IL	1261-	1
FRF~R. FIDRICH, HUNGARY	2399-	37	HLS L. T. HEEN, NORWAY	1208	
FDV D. A. FISHER, CANADA	139-	12	HEF M. A. HEIFNER, CO	370-	118
FIG R. G. FITCH, ME	1		HEL K. HELBAK, NORWAY	65	
FLT R. W. FLEET, ZIMBABWE	211-	26	HEN C. HENSHAW, ZIMBABWE	436	
FEM E. M. FLYNN, MO	23-	1	HGZ~Z. HERCEG, HUNGARY	104	
FDA~A. FODOR, HUNGARY	23		HJN J. HERS, S. AFRICA	943-	344
FFC~F. FOLDESI, HUNGARY	526		HE F. L. HIETT, VA	3919	
FD C. B. FORD, CT	136-	93	HIM M. HILL, MA	217	
FTO T. FORS, DENMARK	13		HRI R. E. HILL, AZ	1117	
FT G. L. FORTIER, CANADA	27		HR R. E. HILL, OH	106-	10
FBN B. FRASER, S. AFRICA	89-	8	HIR Y. HIRASAWA, JAPAN	1157-	126
FJX J. FRASER, S. AFRICA	8		HLT G. M. HOLTER, WA	49	
FSR R. FRASER, SCOTLAND	17		HDT D. H. HOROWITZ, TX	1245	
FRH*A. FRICH, FRANCE	696		HFE~F. HORVATH, HUNGARY	16	
FMG G. C. FUGMAN, WI	80		HSR S. HOSTE, BELGIUM	428-	3
GEC E. C. GALE, IA	20		HU W. S. HOUSTON, CT	9	
GMK M. GASKILL, TX	16		HDS S. E. HUBBARD, MA	6	
GKR R. GECKELER, F.R.GERMANY	90		HJA J. A. HUDSON, CA	187	
GEJ&J. GEENEN, NETHERLANDS	72		HTR T. HUNEFELD, MI	156	
GCP C. GERBER, F.R.GERMANY	136		IML M. IDEM, NY	4191-	1838
GSR R. GESCHWIND, OH	23		ILE~E. ILLES, HUNGARY	252	
GMJ M. GEYSER, S. AFRICA	62		IPA P.A. INGRASSIA, ARGENTINA	26	
GHO L. H. GHIO, ARGENTINA	10		ISK~J. ISKUM, HUNGARY	2	
GDI D. P. GILL, OH	42-	1	IFJ F. J. IVES, NEW ZEALAND	368	
GLF F. R. GLENN, NY	108		JJA J. JAHN, F.R.GERMANY	81-	6
GLW W. H. GLENN, NY	108		JJT J. T. JEFFREY, OR	78-	42
GLC C. GLOWINSKI, F.R.GERMANY	74		JLR R. JEPEAL, CT	179	
GFB W. GOFF, CA	113-	71	JOG G. E. JOHNSON, MD	244-	5
GOT*T. GOMEZ, SPAIN	72		JKL K. L. JONES, AUSTRALIA	16	
GOP P. N. GOODWIN, LA	253-	44	JJL J. JOOSTE, S. AFRICA	36	
GLM L. M. GORSKI, IL	240		JUR~A. JURACSKO, HUNGARY	12	
GIV I. GRABOVAC, CANADA	46		JTA&T. JURRIENS, NETHERLANDS	1	
GFF T. G. GRAFFUNDER, WI	4		KDA D. KAISER, IN	16	
GFG F. G. GRAHAM, PA	4-	2	KEI E. KATO, AUSTRALIA	50-	2
GKA K. A. GRAHAM, IL	122		KKP&P. KERKVIET, NETHERLANDS	42	
GAF A. F. GRANADOS, CA	98		KRB R. P. KING, MN	340-	108
GRL B. H. GRANSLO, NORWAY	5744-	184	KLC C. F. KLAUSING, FL	103	
GHF H. E. GRAY MD, CA	11		KON O. KLINTING, DENMARK	7	
GRI J. W. GRIESE III, CT	2088-	1381	KPL P. W. KNEIPP, LA	13	
GSC*C. GROS, FRANCE	349-	3	KGT G. KNIGHT, ME	395-	1
GML M. GRUNANGER, AUSTRIA	207		KSP S. P. KNIGHT, ME	377-	37
GCT C. GRUNNET, DENMARK	179		KS C. M. J. H. KNOWLES, NH	31	
GUB G. GUBBELS, BELGIUM	562		KOC~A. KOCSIS, HUNGARY	776	
GUG*V. GUGUMUS, FRANCE	133-	6	KCL~L. KOCSIS, HUNGARY	1	
GUI*J.L.GUIZADO LIZAR, SPAIN	21		KDF D. F. KOCYLA, CT	166	
GUN*J. GUNTHER, FRANCE	1243-	35	KKF K. F. KOEHLER, AZ	761-	2
GMF M. A. GUTRIDGE, OK	70-	1	KLG G. A. KOHL, AZ	111	
GWZ*R. GUZIEWICZ, FRANCE	82		KHL M. KOHL, SWITZERLAND	352	
HTY T. HAGER, CT	457-	56	KRS R. S. KOLMAN, IL	1164-	173
HK E. A. HALBACH, CO	6023-	250	KMA M. A. KOMOROUS, CANADA	392	
HMG~G. HALMI, HUNGARY	863		KSG G. KORONIS, GREECE	14	

TABLE III (cont'd)

AAVSO OBSERVERS 1986 - 1987

KRT S.KORTH, F.R.GERMANY	675-	153	MED K. J. MEDWAY, ENGLAND	3230
KOS A. KOSA-KISS, ROMANIA	2277-	9	MDG D. L. MEGGINSON, MO	37
KOA M. KOSHIRO, JAPAN	2020-	694	MJQ&D. MEIJER, NETHERLANDS	8
KAU A. KOSTER, WI	7		MEH C. C. MEINHARDT, WA	29
KVI~I. KOVACS, HUNGARY	1197-	11	MEL R. MELIA, ARGENTINA	4
KIS G.KRISCH, F.R.GERMANY	942		MHI H. I. MENALI, TURKEY	81
KRK K. KRISCIUNAS, HI	39-	1	MDJ D.J.MENDICINI, ARGENTINA	17
KRU J. KRUTA, CZECHOSLOVAKIA	94		MNZ E. MENEGUZZO, ITALY	282
KUC*S. KUCHTO, FRANCE	434		MY~Y&D MEYER, NETHERLANDS	1
KPG&G. KUIPERS, NETHERLANDS	1189-	108	MPY P. MEYERS, S. AFRICA	188
KCF C. F. KURTZ, ARGENTINA	633		MEZ~C. MEZOSI, HUNGARY	11
LCZ~A. LACZKO, HUNGARY	2		MDX&D.MIDDELKOOP, NETHERLANDS	3
LAR R. LAMBERT, TX	29		MDI I.A. MIDDLEMIST, ENGLAND	1215
LND H. J. LANDIS, GA	140		MOK O. MIDTSKOGEN, NORWAY	891-
LTW T. W. LANGHANS, CA	513-	260	MKD K. MILLYARD, CANADA	24-
LAX A. LANGOUSSIS, GA	5		MTL R. E. MILTON, CA	176
LZT T. LAZUKA, IL	825		MJI J. R. MINER, IN	21
LKD D. C. LEAKE, IL	317		MPJ P. J. MINNECI JR., IL	2
LEB*R. LEBERT, FRANCE	458		MIS*J. MINOIS, FRANCE	16
LEG*L. LEGER, FRANCE	49		MZS~A. MIZSER, HUNGARY	3285-
LPI*P. LEISY, FRANCE	25		MCE E. MOCHIZUKI, JAPAN	157
LNZ G. F. LENZ, CT	24		MMI M.MOELLER, F.R.GERMANY	7222
LJN J. M. LEONARD, WV	7		MOD D. G. MOHRBACHER, OH	129
LJL J. L. LEONARD, IL	27		MAR R. MONELLA, ITALY	354-
LEV A. J. LEVEQUE, CA	51		MDE D. R. MONGER, FL	425
LVY D. H. LEVY, AZ	38		MOR R. L. MONSKE, PA	522-
LJK J. LINGAAS, NORWAY	207		MJ A. C. MONTAGUE, MI	550
LKB K. B. LINSLEY, MA	22		MGZ G. MORENO, ARGENTINA	3
LWT T. W. LOHVINENKO, CANADA	298		MJA J. A. MORGAN, WI	17
LGV G. V. LOPATYNSKI, CA	43-	4	MB A. G. MORRISBY, ZIMBABWE	809
LLH L. M. B. LOPES, PORTUGAL	70		MOW W. C. MORRISON, CANADA	5163-
LGN G. R. LOPRIORE, MA	18		MWL W.MOSCHNER, F.R.GERMANY	24
LOS*S. LORSIGNOL, FRANCE	134		MJC C. M. J. MURPHY, FL	9
LEJ E. J. LOS, NH	31		MSU S. K. MURPHY, TX	17
LOT H. LOUTH, WA	1389		MUY E. MUYLLAERT, BELGIUM	233
LX W. M. LOWDER, NY	450		NGR M. NAGAR, NY	7
LTB T. F. LUBBERS, MN	319		NMA~A.NAGY-MELIKUTI, HUNGARY	30
LBK S. J. LUBBOCK, ENGLAND	1486-	621	NBR B. NELSON, MA	7
LBG G. C. LUBCKE, WI	329-	1	NRH R. H. NELSON, CANADA	148-
LKS R. LUKAS, F.R.GERMANY	8		NWL&W. NOBEL, NETHERLANDS	274
LJO&J. O. LUURS, NETHERLANDS	254		NTS T. S. NORTON, MA	91
LBB B. A. LUX, PA	103		NOG G. T. NOWAK, VT	123
LYR R. LYNCH, RI	102-	1	OBG G. J. O'BRIEN MD, CT	24
MDW W.J.MACDONALD II, CANADA	5		OJO J. O. OLESEN, DENMARK	108
MKE R. P. MANSKE, WI	4		OV E. G. ORAVEC, NY	4207
MJU J. C. MARIONI, ARGENTINA	86		OJR*J. R. OSORIO, SPAIN	3128-
MZC C. MARTINEZ, ARGENTINA	41		OSV~L. OSVALD, HUNGARY	55
MRX H. MARX, F.R.GERMANY	1504-	86	OTT P. L. OTTERNESS, VA	9
MDS D. MASSIMO, ITALY	108		OB M.D.OVERBEEK, S.AFRICA	13682-
MUI U. MASSIMO, ITALY	6		PLA A. PADILLA FILHO, BRAZIL	270
MSM*M. MASSON, FRANCE	55		PAO S.PAOLANTONIO, ARGENTINA	214
MTH H. MATSUYAMA, JAPAN	90		PPS~S. PAPP, HUNGARY	3141-
MPX P. MAXSON, AZ	5		PLI*L. PARMEGGIANI, FRANCE	223
MYR E. H. MAYER, OH	2182-	1079	PLZ L. PAZZI, S. AFRICA	112
MJW J. W. MAYER, PA	734-	50	PN A. E. PEARLMUTTER, MA	355
MGU T. J. MCCAGUE, IL	3-	2	PEI E. PEDERSEN, DENMARK	118-
MCX MCCRAE, S. AFRICA	185-	3	PEG*C. PEGUET, FRANCE	258-
MKJ J. F. MCKENNA, NJ	1233-	67	PMR M. R. PERALA, FINLAND	4489-

TABLE III (cont'd)

AAVSO OBSERVERS 1986 - 1987

PAE*A.J.S. PEREIRA, PORTUGAL	436		SHS S. B. SHARPE, CANADA	3920-	72
PZA*A. PEREZ-REVILLA, FRANCE	6784-	22	SSA A. P. SHARPLESS, WA	74	
PFK F. PESCI, ITALY	221		SHW W. R. SHERMAN, IN	188	
PSO S. PESCI, ITALY	19		SSV S. SHERVAIS JR., VA	39	
PED D. B. PETTENGILL, FL	2193-	124	SNW J. W. SHIPMAN, NM	23-	1
PFA J.A. PFANNERSTILL JR., WI	9		SIH*M. SILHOL, FRANCE	726	
PFL F. PFEFFER, TX	1		SDO C. D. SIMONE, ARGENTINA	64	
PHL*A. PHILLIPPE, FRANCE	20		SKK A. L. SKERKER, VA	106	
PIJ~J. PIRITI, HUNGARY	311		SOF O. SKJAERAASEN, NORWAY	70	
PMI M. POTTER, MD	51-	10	SJX J. SMIT, S. AFRICA	98	
PWR R. E. POWASKI, OH	38		SMQ M. S. SMITH, AZ	505	
PHD H. D. POWELL, TN	10		SRV R. V. SMITH, CA	71	
PJN*J. PRAT, FRANCE	17		SOD J. SODER, OH	11	
PDO D. P. PRAY, RI	118		SSZ~Z. SOOS, HUNGARY	113	
PDQ*D. PROUST, FRANCE	26		SJZ J. SPEIL, POLAND	775	
PMK M. PUST, YUGOSLAVIA	46		SSG S. G. SPINDLER, MI	2	
REP P. REINHARD, AUSTRIA	30		SPO J. SPONGSVEEN, NORWAY	343	
RNT C. C. REINHART, OH	12		SC C. E. SPRATT, CANADA	2	
RRC R. C. REISENWEBER, PA	20		SPD M. E. SPRINGFIELD, SC	2	
REN*J. RENAULT, FRANCE	470		SFJ F. J. ST. LOUIS, CANADA	31	
RYM M. A. REYNOLDS, CA	10		SAD&H. STAD, NETHERLANDS	4	
RJI J. I. RIGGS, NY	789-	78	STR R. H. STANTON, CA	213-	171
RLR R. L. ROBINSON, WV	47		SKS T. STECKNER, CANADA	16	
ROP*A. RODRIQUEZ, FRANCE	8		STI P. STEFFEY, FL	5	
RKA~L. ROKA, HUNGARY	12		SGP P. E. STEGMANN, NJ	79	
ROO& ROOS, NETHERLANDS	1		SET C. STEPHAN, FL	591-	23
RB D. W. ROSEBRUGH, FL	250		STF G. STEPHANOPOULOS, GREECE	578	
ROG G. M. ROSS, MI	179-	27	SGS S. A. STERLING, MA	20	
RLU L. ROSSI, ITALY	603		SWT R. J. STEWART, NJ	123-	1
RO J. F. W. ROUSOM, CANADA	8		SGM M. D. SUGARMAN, CA	9-	3
RR R. E. ROYER, CA	242-	15	SUS D. SUSSMANN, F.R. GERMANY	1349	
RPH H. RUMBALL-PETRE, CA	16		SVN P. L. SVENTEK, TX	2297-	58
RAN A. RUTTER, NY	6		SMZ~M. SZASZ, HUNGARY	7	
RLL L. RYAN, AZ	9		SAO~A. SZAUER, HUNGARY	141	
RPJ P. J. RYAN, MA	86-	1	SJT~S. SZIJARTO, HUNGARY	2	
SJC J. C. SADOW, LA	18		SZK~G. SZITKAY, HUNGARY	39	
SGT~I. SAGODI, HUNGARY	296		SKB~B. SZOKE, HUNGARY	21	
SJU* SAINT-JOUAN, FRANCE	137		SZY T. SZYBOWICZ, MI	1	
SJQ A. SAJTZ, ROMANIA	209		TZR R. G. TANZER, NJ	19-	1
SSU S. SAKUMA, JAPAN	1436-	387	TDB D. B. TAYLOR, CANADA	41	
SAH G. SAMOLYK, WI	3162		TLA M. D. TAYLOR, ENGLAND	24	
SSR R. SAMPSON, CANADA	114		TPS~I. TEPLICZKY, HUNGARY	87-	1
SDS D. J. SANDS, AZ	15		THR R. R. THOMPSON, CANADA	200	
SOP O.P. SANTIAGO, ARGENTINA	1		TRB R. THOMSEN, ARGENTINA	24	
SGU~G. SARI, HUNGARY	136		TRJ R.J. THOMSON, S. AFRICA	47	
SCK B. E. SCHAEFER, MD	42		THU*B. THOUET, FRANCE	375	
SIR D. SCHILLER, S. AFRICA	5		TSV S. TINDLUND, NORWAY	6	
SSC S. M. SCHIMPF, CA	8		TJO J. H. TOBIN, CT	5	
SMF F. SCHMIDT, NY	83		TRT~T. TORDAI, HUNGARY	22	
SRD R. H. SCHMIDT, MN	107		TWN A. W. TOWNSEND, TN	12	
SAQ&A. SCHOLTEN, NETHERLANDS	5		TFN F. N. TRAYNOR, AUSTRALIA	59	
SLZ G. SCHOTT, F.R. GERMANY	16		TDM D. M. TROIANI, IL	380-	1
SCY A. SCHROYENS, BELGIUM	77		TVG V.G. TROMBATTO, ARGENTINA	86	
SCZ*E. SCHWEITZER, FRANCE	1744-	49	TNL N. J. TURNER, AUSTRALIA	84	
SCE C. E. SCOVIL, CT	1647-	615	TYS R. L. TYSON, NY	132	
SEZ*J. SEGONZAT, FRANCE	1054-	3	UJV~A. UJVAROSY, HUNGARY	1	
SMV M. SEKIGUCHI, IL	43		UND G. E. UNDERHAY, CA	135-	3
SJK J. C. SEMCZUK, CT	1		VFR*F. VACLIC, CZECHOSLOVAKIA	237	

TABLE III (cont'd)

AAVSO OBSERVERS 1986 - 1987

VAI*J.P. VAIDIS, FRANCE	83		WRA R. A. WEST, AZ	212	
VDW&R. V.D WAL, NETHERLANDS	81		WJH J. E. WESTFALL, FIJI	4	
VWS&J.V.WASSENHOVE, NETHERLANDS	6		WHI S. L. WHITNEY, RI	310	
VPL P. VARELA, ARGENTINA	2		WTK~K. WIESZT, HUNGARY	28	
VKG~G. VASKUTI, HUNGARY	3		WIK C. P. WIKMAN, WA	6	
VED*P. VEDRENNE, FRANCE	4380		WFK F. P. WILKIN, MA	12	
VEL*P. E. VELASCO, SPAIN	19		WI D. B. WILLIAMS, IN	57	
VRG R. VENNE, CANADA	247-	3	WMR R. H. WILLIAMS, CT	14	
VET*M. VERDENET, FRANCE	4989-2661		WLM T. R. WILLIAMS, TX	7	
VIA*J. VIALLE, FRANCE	552		WLP P. WILS, BELGIUM	563-	54
VGP*P. VIGNIER, FRANCE	244-	4	WSN T. W. WILSON, WV	449-	169
VLL A.VILLALOBOS, COSTA RICA	11		WNB B. I. WINGATE, NJ	941	
VLR W. VILLAR, ARGENTINA	111		WCL C. L. WOMACK, TX	458	
VGJ G. J. VINCI, CT	295-	27	WUS E. A. WOODHOUSE, CANADA	13	
VOL W. VOLLMANN, AUSTRIA	704		WMI M. J. WRIGHT, WI	1383	
WKD N. WAKEFIELD, S. AFRICA	36		WRO R. L. WRIGHT, CA	28	
WKP P. R. WALKER, VT	427-	6	WUN E. WUNDER, F.R.GERMANY	252	
WND*D. WALLIAN, FRANCE	128		YON R. R. YOUNG, PA	102-	1
WER R. J. WEBER, KS	88-	1	YUR J. A. YURCHESYN, CANADA	40	
WEI D. D. WEIER, WI	637-	168	ZAG~G. ZAJACZ, HUNGARY	15	
WC R. E. WEND, IL	1473-	1	ZLT~T. ZALEZSAK, HUNGARY	773-	31
WEF F. R. WEST, MD	1032		ZAM M. ZANOTTA, ITALY	75-	4
WJD J. D. WEST, OK	4		ZPA P. A. ZELLER, IN	48	
WTJ J. E. WEST, TX	359-	54	ZRE R. E. ZISSELL, MA	1263-	23

* also member of Association Française des Observateurs d'Étoiles Variables (AFOEV).

~ also member of Pleione Valtozocsillag-eszlelo Halozat (PVH) (Hungary).

& also member of Nederlandse Vereniging Voor Weer-en Sterrenkunde, Werkgroep Veranderlijke Sterren (NVVWS, WVS).

TABLE IV

List of Individuals Requesting AAVSO Data
During Fiscal Year 1986 - 1987*

Name	Affiliation
Basu, S.	Staten Island, NY
Benson, P.	Wellesley College, MA
Benz, A. O.	Institute For Astronomy, Switzerland
Bode, M.	Lancashire Polytechnic, England
Bode, M.	Lancashire Polytechnic, England
Baliunas, S.	Harvard-Smithsonian Center for Astrophysics
Bonnie, H.	Sky & Telescope Magazine, MA
Bord, D.	University of Michigan, MI
Bujarrabal, V.	Centro Astronomico de Yebes, Spain
Carone, T.	University of Arizona, AZ
Carone, T.	University of Arizona, AZ
Caylor, J.	Urbana, IL
Chlebowski, T.	Harvard-Smithsonian Center for Astrophysics
Cortes, T.	Chaple Hill, NC
Debarat, S.	Observatoire de Paris, France
DiCicco, D.	Sky & Telescope Magazine, MA
Drew, J.	University of Oxford, England
Drew, J.	University of Oxford, England
Drew, J.	University of Oxford, England
Dudek, J.	Whitefish Bay, WI
Duerbeck, H.	Astronomical Institute, F.R. Germany
Duerbeck, H.	Astronomical Institute, F.R. Germany
Dyck, G.	N. Dartmouth, MA
Eaull, E.	Harvard University, MA
Echevarria, J.	Observatorio Astronomico Nacional, Mexico
Fishman, G.	NASA Marshall Space Flight Center, AL
Fjermedal, G.	Seattle, WA
Fredrick, L.	Leander McCormick Observatory, VA
Garcia, G.	Hoffman Estates, IL
Gehrz, R.	University of Minnesota, MN
Gillet, D.	Centre National de la Rech. Sci., France
Glaccum, B.	NASA Goddard Space Flight Center, MD
Grenon, M.	Observatoire de Geneve, Switzerland
Hadley, D.	McDonald Observatory, TX
Hanall, B.	University of Oxford, England
Harkins, S.	P.V.E., CA
Heikkila, R.	Forssa, Finland
Heske, A.	Universitat Hamburg, F.R. Germany
Hoffleit, D.	Yale University, CT
Howell, S. B.	NASA Goddard Space Flight Center, MD
Jewell, P. R.	Steward Observatory, AZ
Jones, D.	Royal Greenwich Observatory, England
Kaitchuck, R. H.	Ohio State University, OH
Kaitchuck, R. H.	Ohio State University, OH
Kaitchuck, R. H.	Ohio State University, OH
Kaitchuck, R. H.	Ohio State University, OH
Kaitchuck, R. H.	Ohio State University, OH
Karovska, M.	Harvard-Smithsonian Center for Astrophysics
Karovska, M.	Harvard-Smithsonian Center for Astrophysics
Kiplinger, A.	NASA Goddard Space Flight Center, MD
Kiplinger, A.	NASA Goddard Space Flight Center, MD
Kleinman, S.	University of Massachusetts, Amherst, MA
Kleinman, S.	University of Massachusetts, Amherst, MA
Kleinman, S.	University of Massachusetts, Amherst, MA
Kleinman, S.	University of Massachusetts, Amherst, MA
Kohoutek, L.	Hamburg-Bergedorf, F.R. Germany
Landolt, A.	Louisiana State University, LA
Lawrence, G.	University of Minnesota, MN

TABLE IV (cont'd)

List of Individuals Requesting AAVSO Data
During Fiscal Year 1986 - 1987*

Name	Affiliation
Leparskas, H.	University of Western Ontario, Canada
Levy, D.	Tucson, AZ
Livio, M.	University of Illinois, IL
Livio, M.	University of Illinois, IL
Lloyd, C.	IUE Observatory, Spain
Lubbock, S.	Bridgend, Wales
Lutes, D.	San Diego, CA
Mackintosh, G.	Littleton, MA
MacRobert, A.	Sky & Telescope Magazine, MA
MacRobert, A.	Sky & Telescope Magazine, MA
Majdacic, C.	Astronomy Magazine, NM
Mauche, C.	Harvard-Smithsonian Center for Astrophysics
Marsden, B. G.	IAU Circulars, Smithsonian Astrophys. Obs.
Marsden, B. G.	IAU Circulars, Smithsonian Astrophys. Obs.
Marsden, B. G.	IAU Circulars, Smithsonian Astrophys. Obs.
Marsden, B. G.	IAU Circulars, Smithsonian Astrophys. Obs.
Marsden, B. G.	IAU Circulars, Smithsonian Astrophys. Obs.
Marsden, B. G.	IAU Circulars, Smithsonian Astrophys. Obs.
Marsden, B. G.	IAU Circulars, Smithsonian Astrophys. Obs.
Marsden, B. G.	IAU Circulars, Smithsonian Astrophys. Obs.
Marsden, B. G.	IAU Circulars, Smithsonian Astrophys. Obs.
Marsden, B. G.	IAU Circulars, Smithsonian Astrophys. Obs.
Marsden, B. G.	IAU Circulars, Smithsonian Astrophys. Obs.
Marsden, B. G.	IAU Circulars, Smithsonian Astrophys. Obs.
Marsden, B. G.	IAU Circulars, Smithsonian Astrophys. Obs.
Marsden, B. G.	IAU Circulars, Smithsonian Astrophys. Obs.
Marsden, B. G.	IAU Circulars, Smithsonian Astrophys. Obs.
Marsden, B. G.	IAU Circulars, Smithsonian Astrophys. Obs.
Marsden, B. G.	IAU Circulars, Smithsonian Astrophys. Obs.
Mason, K. O.	Mullard Space Science Laboratory, England
McIvor, R.	British Columbia, Canada
Michalitsianos, A. G.	NASA Goddard Space Flight Center, MD
Middleditch, J.	Los Alamos National Laboratory, NM
Middleditch, J.	Los Alamos National Laboratory, NM
Minniti, D.	Universidad Nacional de Cordoba, Argentina
Minor, P. D.	Bristol, CT
Moffatt, T.	University of Montreal, Canada
Mozurkewicz, D.	Naval Research Lab, DC
Nazzaro, N.	Ben Salem, PA
Nook, M.	University of Wisconsin, WI
Nook, M.	University of Wisconsin, WI
Nyberg, D. A.	Avon Park, FL
Oliversen, R.	NASA Goddard Space Flight Center, MD
Paresce, F.	Space Telescope Science Institute, MD
Paresce, F.	Space Telescope Science Institute, MD
Percy, J. R.	University of Toronto, Canada
Piazza, T.	Signature Magazine, NY
Polidan, R.	University of Arizona, AZ
Polidan, R.	University of Arizona, AZ
Poole, R. S.	Pittsburgh, PA
Porcellino, M. R.	Chicago, IL
Priedhorsky, W.	Los Alamos National Laboratory, NM
Pyle, C.	Houston Record, TX
Raveendran, A. V.	Indian Institute of Astrophysics, India
Reichert, G.	NASA Goddard Space Flight Center, MA
Robinson, D.	Needham, MA
Robinson, E.	University of Texas, TX
Robinson, E.	University of Texas, TX
Sahai, R.	Institute of Theoretical Physics, Sweden

TABLE IV (cont'd)

List of Individuals Requesting AAVSO Data
During Fiscal Year 1986 - 1987*

Name	Affiliation
Schaefer, B. E.	NASA Goddard Space Flight Center, MD
Schmidtke, P. C.	Arizona State University, AZ
Schweitzer, E.	AFOEV, France
Sehlstedt, A.	Baltimore Sun , MD
Shafter, A.	University of Texas, TX
Shara, M.	Space Telescope Science Institute, MD
Slovak, M.	University of Wisconsin, WI
Snijders, T.	Royal Greenwich Observatory, England
Snijders, T.	Royal Greenwich Observatory, England
Snijders, T.	Royal Greenwich Observatory, England
Solheim, J. E.	University of Tromso, Norway
Stanford, A.	University of Wisconsin, WI
Stanford, A.	University of Wisconsin, WI
Stencel, R.	University of Colorado, CO
Stencel, R.	University of Colorado, CO
Stencel, R.	University of Colorado, CO
Stepanian, M.	Framingham, MA
Surrafian, H.	Aerospace Corporation, CA
Szkody, P.	University of Washington, WA
Timm-Arnold, K. P.	Leverkusen, F.R. Germany
Verbunt,	Los Alamos, NM
Verbunt,	Los Alamos, NM
Viotti, R.	CNR Astrofisica, Italy
Wahlgreen, G.	Space Telescope Science Institute, MD
Wallerstein, G.	University of Washington, WA
Wallerstein, G.	University of Washington, WA
Wallerstein, G.	University of Washington, WA
Wallerstein, G.	University of Washington, WA
Walzchonaski, G.	Odyssey Magazine , WI
Wdowiak, T.	University of Alabama, AL
Woodsworth, A.	National Research Council, Canada
Zieler, H. P.	Santa Cruz, CA