ANNUAL REPORT OF THE DIRECTOR FOR FISCAL YEAR 1998–1999

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It is a privilege and a distinct pleasure for me to present to you my Annual Report for the Fiscal Year 1998–1999.

This has been a very active year, in which we have: posted over 1,600 mostly Preliminary and reversed Preliminary charts—00 through 23 hours—on the web; expanded the web site, putting the AAVSO Database on-line by adding the capability of generating light curves of program stars, and superimposing observations of an individual observer's on the light curve, right on the web; responded to a record high number of requests for data, with significant numbers of requests coming through the web; participated in exciting satellite and ground-based observing programs; reached another milestone in the number of observations in the AAVSO International Database; streamlined data processing; designed a more secure and robust web site; expanded the dissemination of AAVSO *Hands-on Astrophysics* (HOA)—both nationally and internationally—and received the endorsement of the United Nations for HOA to be a curriculum for the UN observatories around the world.

In my Annual Report I will summarize these and other activities.

1. Internet connection

In the past year the AAVSO's internet presence increased dramatically. Among our accomplishments this year, we have: indexed all pages of the site and added the capability to search the web site for any page; added on-line access to the AAVSO International Database—web site visitors can now plot the data, from 1963 on, of any star in the AAVSO observing program, superimpose the observations of an observer on the light curve, and request the data from the AAVSO technical staff via the web; added almost all AAVSO publications on-line, with on-line archives of back issues growing monthly.

Especially noteworthy among our internet accomplishments: we have added to the web site 1,600 Preliminary and reversed Preliminary charts (00 through 23 hrs of RA), together with a few Standard (most of the Standard charts were added last year) and reversed Standard charts. This brings the total number of downloadable AAVSO charts on the web to 2,700. The Preliminary charts were scanned by our members Carl Feehrer, Lenny Abbey, and Bob Leitner, and the reversed charts prepared by our European member Marc Biesmann, all under the supervision of Charles Scovil. The charts were prepared to be posted on the web by HQ staff members Kerriann Malatesta and Gamze Menali, and were posted by Randal Milholland and Aaron Price.

Here are some AAVSO web site statistics for October 1, 1998, to October 1, 1999: Total number of hits: 1,928,064: average hits per day: 1032; number of visitors: 54,738; pages downloaded: 893,488.

Popular downloads were: Main—669,322; HOA—33,720; Charts—190,446. Tools—43,613; *News Flash*—41,900; Light curve generator—22,819. Charts downloaded: Preliminary—41,943; Standard—12,806; GIF downloads—41,902; Postscript—14,576. The five most popular constellations in chart downloads were: Aquila, Cassiopeia, Andromeda, Auriga, and Cygnus. The five most popular stars for download were: R Cas, V Cas, HT Cas, SS Aur, and Z UMa. The most popular day on-line was Monday. The most popular time was 1500 (3pm) EST.

Here are some comments we received about our web site:

• Your website is fantastic! Keep up the good work! —*John W. Chesney*

• The site generally is excellent.... Congratulations on the continual upgrades to a growing and demanding site! —*Lewis Cook*

• I really like your website. It is functional, easy to navigate, and has a lot of interesting items and information available for download. Good job! —*Andreas Lauvstad*

• Keep up the good work! Having the charts on-line is such a big plus—it's really helped me add more stars to my program and to increase my monthly totals. —*Shawn Dvorak*

We have had three very nice events that have occurred thanks to our web site:

• Here is a message from a young astronomer who had been mentored by Ed Halbach:

I don't know if you remember me, but you helped connect me with Edward Halbach years ago when I was a "kid with a telescope." Since then I've moved up a bit to the Hubble Space Telescope. I noticed my image of the Pistol Star on your Circular site [on our web]! This summer, I will be moving to Baltimore as astronomer for STScI. —*Don Figer*

• We have discovered the grandson of Leon Campbell:

According to our family history my grandfather Leon Campbell worked at Harvard Observatory in the early 1900's. I would appreciate any information you could supply about him to get up to speed on some missing family background. I do know that he helped write a book or two about variable stars but would like to find out more. Thank you. —*Scott F. Campbell*

• Through our web site we have been found by Henrietta Swan Leavitt's great niece. She sent us the following email as she was surfing our HOA site:

Please accept my thanks for a beautifully stated description of my great aunt Henrietta Swan Leavitt, whom I never knew but have been able to know her a little better through your web site. —*Cassandra Jorge Brown Polemi*

2. Data management and data processing

2.1. Computerization and processing of current data

The computerization of monthly data that we receive by email, fax, and postal mail is up to date, thanks to Barbara Silva, who enters and verifies the data that come by postal mail, Kerriann Malatesta and Michael Saladyga who process the data, and Elizabeth Waagen, who oversees the whole procedure and archives the data in the AAVSO International Database. On the average, we continue to receive about 60% of the reports received electronically via email and diskette. Of these electronically-submitted reports, about 79% are created using the AAVSO data entry and report formatting software.

In the beginning of the fiscal year we took a close look at our data processing operations to determine how long it was taking the staff each month (data entry excluded). From this, we determined the areas of data processing that we could make more efficient, and we took the following significant actions:

• identify observers who were not sending their data, particularly nightly data, in the AAVSO or other accepted formats, and notify them;

• include in the AAVSO International Database only observations reported monthly: that is, do not include nightly reports that were not also submitted as monthly reports, and contact observers who were not submitting monthly reports;

• expand the letter comments on the AAVSO report form in order to minimize the time needed for the technical staff to alter or add comments on the report forms.

The results of carrying out these and other steps, including incorporating a number of new and revised computer programs and utilities written by Michael Saladyga, have significantly improved our data processing procedures, thus allowing the technical staff more time to engage in other operations. We are continually working to make our data processing operations more efficient.

2.2. Upgrading computer hardware

The most significant changes to the system infrastructure have to do with the AAVSO web site and the FTP site. Using funds awarded through a Theodore S. Dunham grant from the Fund For Astrophysical Research (FAR) we built a dedicated server to host our web and FTP sites. This server uses the latest in Intel server hardware and is very modular, allowing for easy and cost-effective upgrades in the future. Having a dedicated web and FTP site server has increased the security of our system, and has taken the load off of the main AAVSO database server.

Our email server has been rebuilt with the latest release of the Linux software, and is constantly upgraded with the most recent software and security upgrades.

In addition, significant efforts were made in increasing the Headquarters network's reliability and security. A disk storage array called RAID5 was created which is fully redundant, such that if a disk drive fails, the staff can go on working while it is replaced. This arrangement provides for no loss of data, and system downtime can be scheduled for non-business hours.

In addition to this redundancy, the tape backup system was traded in for a larger model with the capacity to serve our network through significant future growth. Also, five new computers were built for staff members. Finally, a more formalized approach to system security was adopted by all staff members in recognition of the organization's growing popularity on the Internet.

3. Requests for AAVSO data

We have responded to a record number of 284 requests that have come directly to Headquarters for AAVSO data and information. We have provided data support for ground-based and satellite observations such as: IOTA, ASCA, SAX, ISO, HST, EUVE, IUE, and POLAR. A significant number of astronomers are obtaining the data and information they need from the AAVSO *News Flash*, and/or other materials we have posted on the web, particularly the quick-look files, which contain nightly observations reported by our observers and which we update on the web every weekday.

A significant number of professional and amateur astronomers and students are sending their requests for data to Headquarters via the web. Since we added the capability of plotting a light curve on the web and then, if needed, requesting the data automatically, we have seen an increase in the number of requests.

Those requesting AAVSO data are: professional astronomers and graduate students, 50%; students, 27%; amateur astronomers and observers, 19%; newspaper and magazine reporters, 3%; and teachers, 1%.

A list of individuals requesting data, as well as each person's affiliation and location, is given in Table 5 at the end of my report.

The types of stars for which AAVSO data and services have been requested this year are given in the list below and in Figure 1:

a. Long Period Variables—51% (Mira 36%; Semiregular 15%)
b. Cataclysmic variables—27% (Dwarf novae 23%; Novae, Nova-like, recurrent novae, Supernovae 4%)
c. Cepheids—4%
d. Eclipsing Binaries and RR Lyr stars—3%
e. Symbiotic stars of Z And type—2%
f. Miscellaneous (all other types) 13%

The areas in which AAVSO data or services have been used this year are given in the list below and in Figure 2:

a. multicolor data correlation from gamma-ray to radio wavelengths—32%
b. data analysis—12%
c. scheduling of observing runs with ground-based telescopes and space satellites and simultaneous observations of observing targets, particularly with HST, EUVE, RXTE, and Beppo SAX satellites—9%
d. reference materials—14%
e. science projects—7%
f. setting up observing programs—5%
g. IAU Circulars—1%
h. educational programs—20%

I want to share with you some examples of interesting requests.

We have been receiving many letters from elementary students requesting information on astronomy and variable stars. The one below was a novel one.

Dennis Mo wrote:

> ...I am 10 years old. I am an average student in fifth grade. I know you are always busy. Can you please help me answer these [astronomical] questions for me? Well, if you do I will really appreciate it. I bet you are a great astronomer! Thank you! P.S. Please sit down and drink tea. I put a tea bag in the envelope. (I hope you like it.)

This young student knows how to have his request filled. I made a nice cup of tea with the tea bag he sent and answered the questions he asked.

Dr. Eric Perlman from Space Telescope Science Institute informed us that the BL Lacertae object 2002-42 PKS2005-489 had a large X-ray flare, 10 to 20 times brighter than its average brightness, November 10 - 12 and that the RXTE satellite was able to monitor the source throughout the flare. He inquired to see if we had any data on this interesting object before, during, and after the flare. Our observer L. Monard from South Africa had been observing this interesting object and so we sent the data he had submitted to the AAVSO International Database to Dr. Perlman. Dr. Perlman wrote to thank us for the data and then continued:

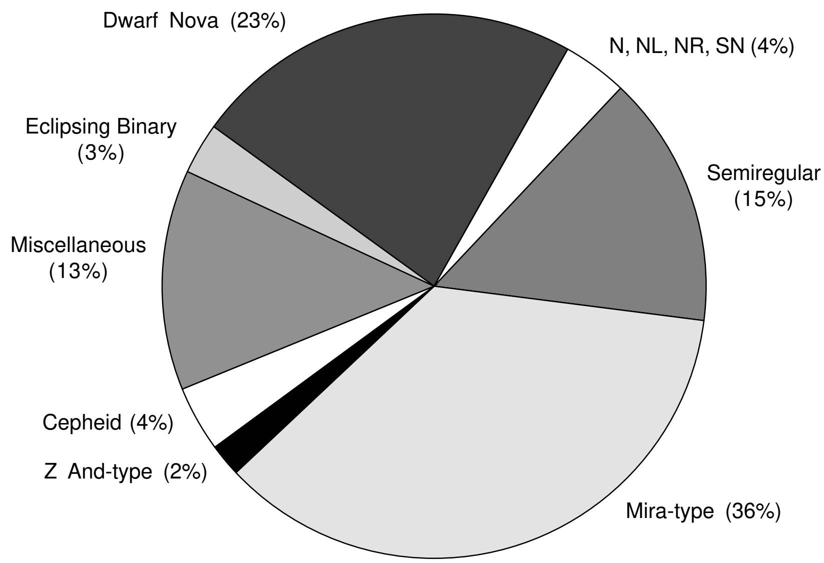


Figure 1. Types of stars for which AAVSO data were requested during fiscal year 1998–1999.

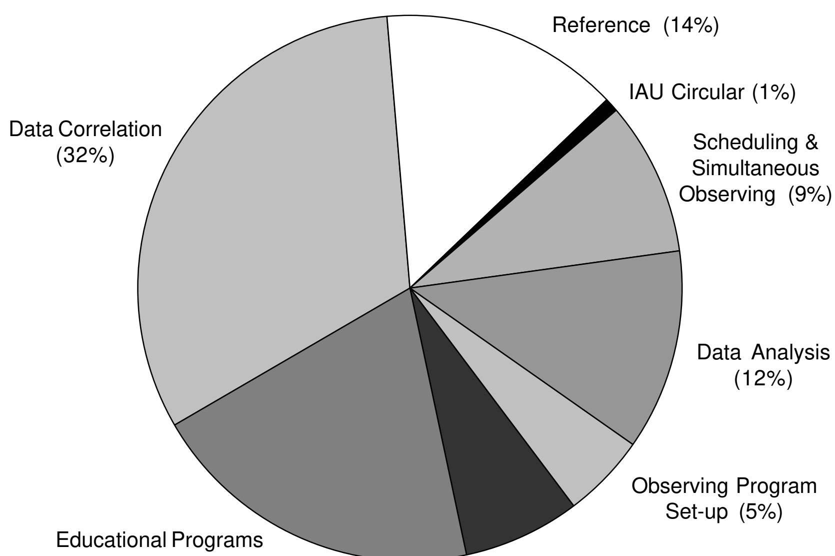


Figure 2. Areas in which AAVSO data or services were used during fiscal year 1998–1999.

> ...These data will be very helpful. Frankly this is more data than I'd hope existed, given how little visibility there was of PKS20005 during its flare. Please give all the observers a hearty thanks from me.

One of the exciting collaborative multiwavelength observations that we were involved in this year was on the bright dwarf nova SS Cygni. Dr. Christopher Mauche, from Lawrence Livermore National Laboratory, had been awarded time three years ago to observe SS Cygni with Hubble Space Telescope (HST), Extreme Ultraviolet Explorer (EUVE), and Rossi X-ray Telescope (RXTE). While very successful EUV and X-ray observations were carried out with EUVE and RXTE (see Director's Report, *JAAVSO*, Vol. 25, 156–157), HST could not be scheduled to observe SS Cyg at that time. So this year Dr. Mauche was awarded HST time again, together with EUVE and RXTE time, to observe SS Cyg during a very tight observing window from April through June. SS Cyg had a short, anomalous (slow rising, symmetrical) outburst at the end of April, but HST could not be scheduled to observe it. At the beginning of June, only after 30 days after the preceding outburst (the average outburst interval is 50 days), SS Cyg started to brighten slowly again, indicating that another anomalous outburst might be starting. To have an outburst occur only 30 days after the preceding one, and especially to have another anomalous outburst, is rare. Thanks to our observers' very close monitoring and continuous information sent to Headquarters, we were able to alert Dr. Mauche so that he could trigger the satellite observations. The outburst was in fact another anomalous one, in which it took SS Cyg 8 days to reach maximum. EUVE, RXTE, and HST observed SS Cyg simultaneously for the first time, and a very successful set of data was obtained. Dr. Mauche informed us that the preliminary data showed EUV emission lagged behind the optical by about 10 days, that at maximum EUVE was able to detect very short-term (about 9.5 seconds) pulsations in EUV, and that HST spectroscopic data showed P Cyg lines indicating stellar wind as well as a possible shock wave at some distance. This was a wonderful example of a very successful collaboration among AAVSO observers and Headquarters staff, our professional colleagues, and the operation teams of EUVE, RXTE, and HST.

4. Awards, recognition, and outreach

4.1. Awards given

a. AAVSO Observer Awards: At the joint meeting of the AAVSO, Astronomical Society of the Pacific, and the Royal Astronomical Society of Canada, held in Toronto in July, we presented the following AAVSO Observer Awards: to Danie Overbeek of South Africa, who made over 250,000 observations; five awards to those observers who have made 50,000 or more observations; two awards to observers who have made 25,000 or more observations; ten awards to observers who have made 10,000 or more observations; one award to an observer who has made 10,000 or more CCD observations; one award to an observer who has made 5,000 or more CCD observations. The list of Observer Awards was published in *JAAVSO,* Vol. 28, p. 72.

b. AAVSO Director's Award: At the 88th Spring Meeting held in Toronto jointly with the Astronomical Society of the Pacific and the Royal Astronomical Society of Canada, the AAVSO Director's Award for 1998–1999 was presented to Charles E. Scovil for his untiring efforts in making and revising charts and preparing them for the AAVSO web site.

c. AAVSO Nova Awards: At the 88th AAVSO Annual Meeting we presented the following AAVSO Nova Awards: to Alan Gilmore for his independent discovery of Nova Vel 1999 (V382 Vel); to Peter Williams for his independent discovery of Nova Vel 1999 (V382 Vel).

d. AAVSO Solar Observer Awards: At the 88th AAVSO Annual Meeting, for the first time, AAVSO Solar Observer Awards were presented to 77 sunspot observers, 12 sudden ionospheric disturbance (SID) observers, and 3 who observed both sunspots and SIDs, and 6 Solar Division Honor Awards were presented to former Solar Division chairmen and long-time solar observers.

The lists of recipients of the AAVSO Nova and Solar Observer Awards appear in this issue following the Minutes.

4.2. Recognition received

Four AAVSO staff persons were recognized at this meeting for their long terms of service to the AAVSO: Elizabeth O. Waagen, for her 20 years of service as senior technical assistant; Barbara J. Silva, for her 20 years of service as data entry technician; Michael Saladyga, for his 15 years of service as technical assistant; and Lynn M. Anderson, for her 5 years of service as *Journal* production editor and *Newsletter* editor.

I have been elected as one of two Patrons of the Friends of Boyden Observatory in Bloemfontein, South Africa. This famous observatory is the one that Harvard College Observatory used in the first part of the century. The observatory has now been revitalized and is being used extensively for public outreach and education.

4.3. Outreach programs

I have been asked to chair a new working group that has been established in the American Astronomical Society (AAS) entitled, "Working Group on Professional-Amateur Collaboration." The goal of the working group is to promote collaborations and to inform these groups about each other. We will be organizing oral and poster sessions at the AAS meetings on successful professional-amateur collaborations and related topics. The group will also develop a web page on the AAS web site and establish a database of amateur astronomers and their instruments.

5. AAVSO educational project

5.1. Status of HOA sales and distribution

I am happy to report that the sale and dissemination of AAVSO's *Hands-on Astrophysics* (HOA) is going well. This fiscal year we have sold 145 copies of HOA and given out for evaluation or as complimentary 17 copies. In addition, we have sold or distributed 3 software packages of VSTAR and the other programs, 106 videos, and 15 sets of slide prints. To date, we have distributed 377 complete HOA packages.

HOA is advertised prominently and marketed through the Astronomical Society of the Pacific's catalogue. In addition, it is marketed by the Eisenhower National Clearinghouse.

5.2. HOA talks and displays

In November, I presented a talk at a National Conference on Science, Mathematics, and Technology Education at The Park School in Baltimore, MD.

In March, I was invited, as one of a team of three International Astronomical Union members, to attend the United Nations (UN) Workshop on Basic Space Science, held at Al al-Bayt University, Mafraq, Jordan. I gave an invited talk on variable stars, the AAVSO, and *Hands-on Astrophysics*. HOA was enthusiastically received by the attendees, and we established several collaborations centering on HOA, for example: the UN astronomy representative, Dr. Hans Haubold, strongly endorsed HOA and suggested it be the curriculum for the five UN astronomical sites (with telescopes donated by Japan); a young colleague from Austria is including variable stars and activities from HOA in a new CD on astronomy he and his colleagues are putting together.

The AAVSO had an HOA exhibit at the national meeting in Boston of the National Science Teachers Association (NSTA). The exhibit was well received, and through it very valuable connections have been made with leading educators and exhibitors.

In June, I presented an HOA and variable star activity and observing 2-week teachers' enhancement workshop in Hawaii, under the leadership of Dr. Karen Meech.

John Percy presented a talk on HOA at the UN meeting in Austria in July.

During the joint meeting of the Astronomical Society of the Pacific (ASP), the AAVSO, and the Royal Astronomical Society of Canada (RASC) held in Toronto, Canada, in July, we had an exhibit on the AAVSO and HOA, and held a 3-hour workshop on HOA. Later, at the ASP Symposium on "Partners in Astronomy," many references were made to HOA, and it was featured as one of the exemplary education programs during the panel discussions on Research-Based Science Education.

Ann Piening McMahon, educational coordinator in St. Louis, MO, and one of our former assistants, is disseminating HOA to education systems in the midwest and nationally through the Eisenhower Educational Programs.

Donna Young, the teacher who was the principal author of the HOA Manual, and who introduced HOA to the Science Olympiad national science competition program, gave another workshop to 485 competition coaches of this program. At this workshop, one of the coaches who teaches 8th grade and introductory astronomy at a college, and who had bought HOA last year, told her that she uses HOA extensively and that she had never before seen such a teacher- and student-friendly curriculum package.

One of our former workshop teachers, Tony Heinzman from Stony Ridge, CA, has made HOA part of the curriculum in his school district, and Donna Young conducted an HOA workshop in his school district.

Dr. Mary Kay Hemenway, the leader of the American Astronomical Society's education program ASTRA, has disseminated HOA to her leading teachers for their classroom and workshop use.

In addition to the above, our members Ray Berg, Kenneth Ludeke, and Dan Kaiser have promoted HOA in many local meetings and classrooms.

Thus, HOA is making a true impact on the science education system.

6. Summary of observations

I am happy to report that this year we reached another observational milestone—the 9.5 millionth observation was made by Ferenc Puskas of Hungary with his observation of 1625+42 g Her, on JD 2451342.5 (June 12, 1999), at magnitude 5.5 (see Figure 3).

6.1. Annual observations

This year we received 340,604 visual, photoelectric, and CCD observations from 623 observers worldwide. These totals include 117,435 observations, of which 20,876 are inner sanctum observations, from 203 observers in the United States, and 223,169 observations, of which 28,887 are inner sanctum observations, from 420 observers abroad.

The total number of observations since 1911 in the AAVSO International Database is 9,516,987. Figure 4 shows the number of observations submitted annually to the AAVSO International Database since 1911.

Our top three observers for this fiscal year were Gary Poyner (England) with 10,839 observations, Georg Comello (The Netherlands) with 11,523, and Danie Overbeek (South Africa) with 12,525 observations. Together, these three observers contributed over 10% of all observations this year!

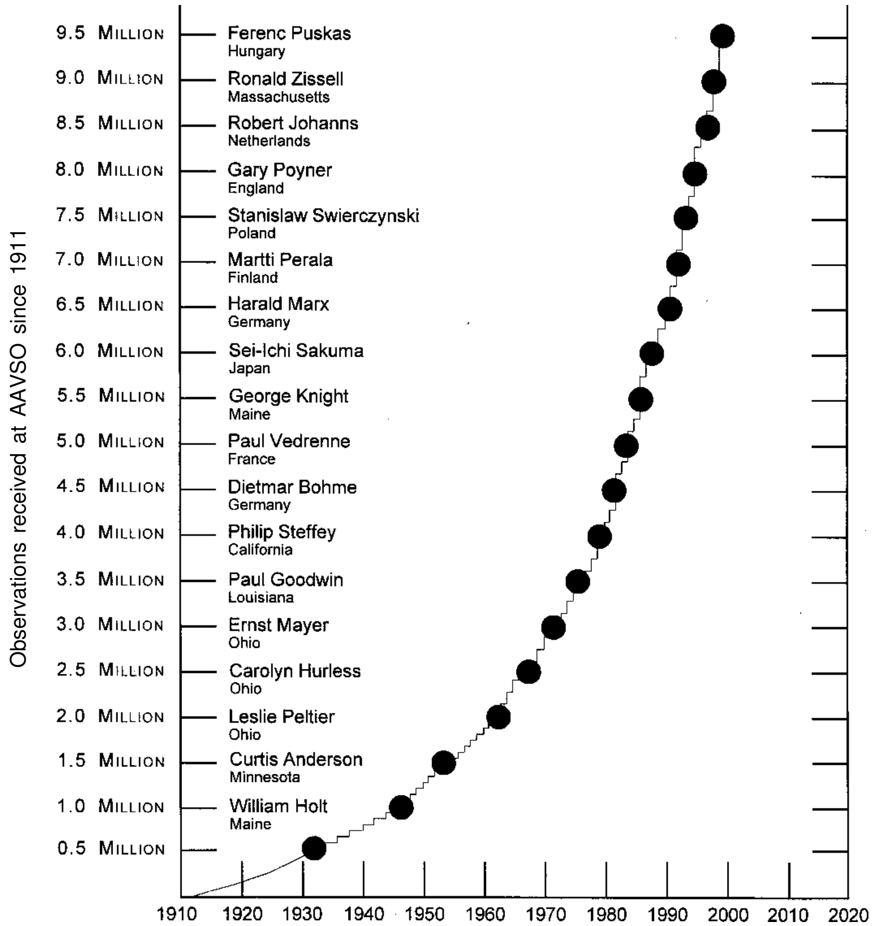


Figure 3. Megasteps of the AAVSO—the year in which each half-millionth observation was contributed to the AAVSO International Database, and the name of the observer credited with making the observation.

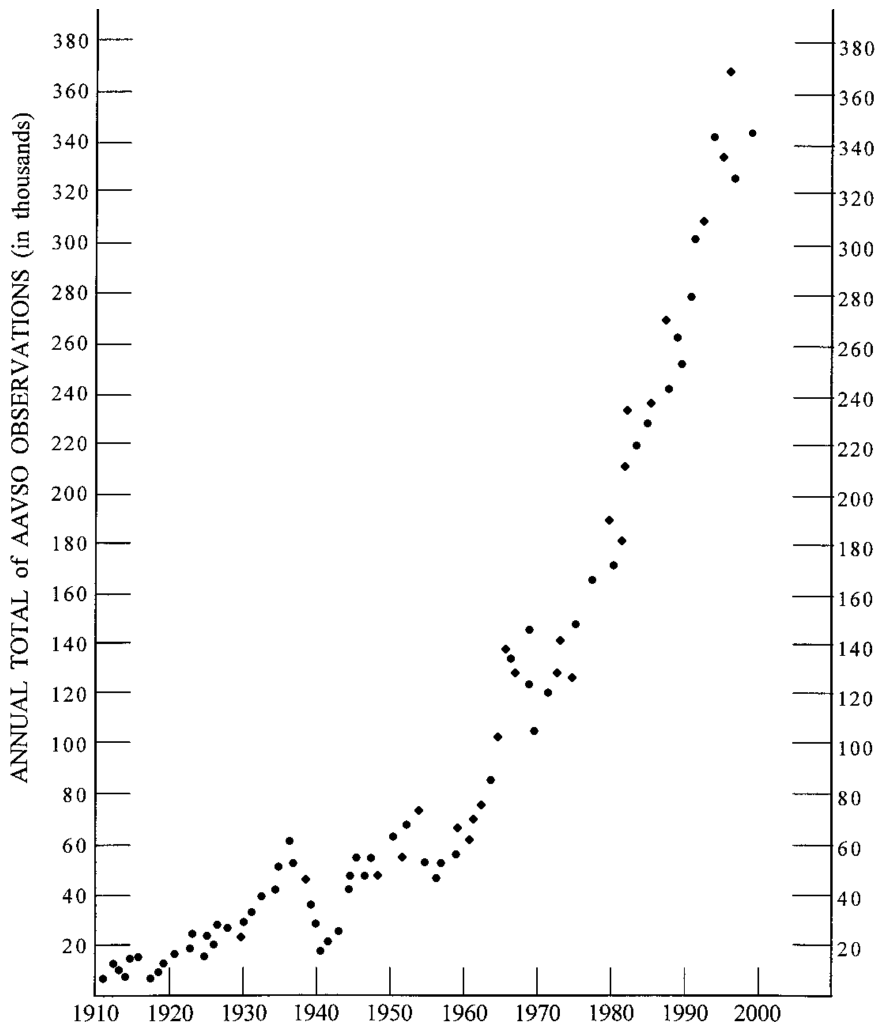
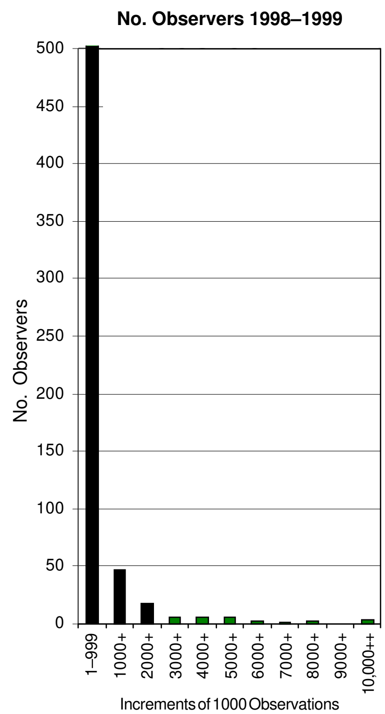
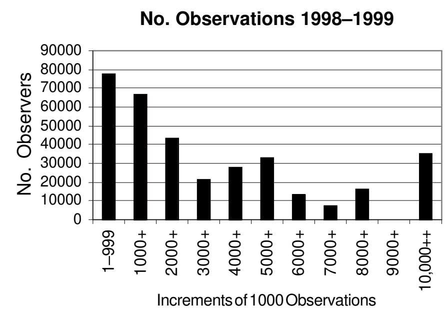
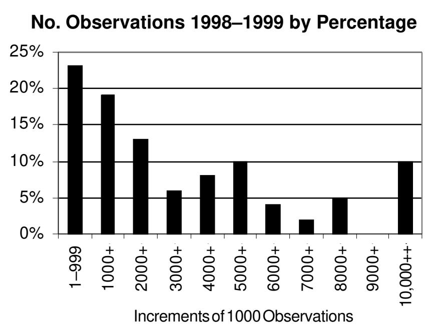


Figure 4. Number of observations submitted each year to the AAVSO International Database since its founding in 1911.







Figures 5, 6, and 7. These figures represent the information given in Table 4. Figure 5 (left) shows the number of observers, each of whom contributed 1–999; 1,000–9,999 (in increments of 1000), and 10,000 or more observations in fiscal 1998–1999. Figure 6 (top right) shows, for each increment of 1,000 observations, the total number of observations contributed by the corresponding number of observers shown in Figure 5. Figure 7 (bottom right) shows, for each increment of 1,000 observations, the number of observations given in Figure 6, represented as a percentage of the total number of observations contributed to the AAVSO in fiscal 1998–1999.

Table 1 lists the number of observers and the total observational contribution from each country during this fiscal year. Table 2 gives the same information for each state or territory in the United States. Table 3 is an alphabetical list of observers, giving each person's AAVSO observer initials, location, and annual totals of observations and inner sanctum observations (magnitude 13.8 or fainter, or "fainter than" 14.0 or fainter).

Table 4 lists the numbers of observers, each of whom made 1 to 999 observations; 1,000 to 9,999 observations (in increments of 1,000); and 10,000 or more observations this year. Table 4 also lists for each category the total number of observations and the percentage of all observations the category represents. Figures 5, 6, and 7 are schematic representations of the information in Table 4.

We received 2,891 observations from 20 photoelectric observers. Howard Landis, chair of the AAVSO Photoelectric Photometry Committee, digitizes these observations, reduces them to standard format, archives them, and sends them to Headquarters to be included in the AAVSO Photoelectric Photometry Database.

We received 20,498 CCD observations from 32 observers. These include B, V, R, I observations of CCD program stars and the CCD observations of other types of stars, particularly faint cataclysmic and long period variables. Gary Walker, the chair of the AAVSO CCD Committee, makes sure that the CCD-program star observations are reduced in the standard format, archived, and submitted to Headquarters for inclusion in the AAVSO CCD Database.

We received 25,317 eclipsing binary and RR Lyrae star observations from 66 observers. Marvin Baldwin, chair of the AAVSO Eclipsing Binary and RR Lyrae Committees, together with committee member Gerry Samolyk, reduces and archives the observations for the determination of times of minima and maxima, respectively.

We received 867 supernova search observations from 4 observers. These observations, which are not included in the annual totals, are archived at AAVSO Headquarters. Rev. Robert Evans, chair of the AAVSO Supernova Search Committee, continues to provide vital guidance to the observers.

We received 10,089 nova search observations from 5 observers. These observations are not included in the annual totals. Rev. Kenneth Beckmann, chair of the AAVSO Nova Search Committee, compiles these observations and provides valuable guidance to observers.

We received 12,574 sunspot observations from 95 observers, and 968 SID detections made by 15 observers. Joseph Lawrence, chair of the AAVSO Solar Division, compiles and digitizes these observations, and provides valuable guidance to the solar observers.

My most sincere thanks to all our observers for their tireless efforts, dedication, and vital astronomical contributions to the AAVSO International Database.

My sincere thanks to our data processing and archiving staff—Elizabeth Waagen, Kerriann Malatesta, Michael Saladyga, Barbara Silva, and Gamze Menali, who very carefully digitize, process, and archive our hundreds of thousands of observations received each year.

My thanks also to Marvin Baldwin, Howard Landis, Gary Walker, and Ken Beckmann—the chairs of the Eclipsing Binary, RR Lyrae Stars, Photoelectric Photometry, CCD, and Nova Search committees, respectively—for compiling and archiving the observations they receive.

6.2. International cooperation

We acknowledge with appreciation the observations sent to the AAVSO by members of the following variable star associations, either individually or as a group, for inclusion in the AAVSO International Database for dissemination to the astronomical community worldwide:

a. Agrupacia Astronomica Albireo of Seville (Spain);
b. Asociacion Argentina Amigos de la Astronomia;
c. Asociacion de Variabilistas de Espagne (Spain);
d. Association Française de Observateurs d'Étoiles Variables (France);
e. Astronomical Society of South Australia;
f. Astronomical Society of Southern Africa, Variable Star Section;
g. Astronomischer Jugendclub (Austria);
h. Astronomisk Selskab (Scandinavia);
i. British Astronomical Association, Variable Star Section;
j. Bundesdeutsche Arbeitsgemeinschaft für Veränderliche Sterne e.V. (BAV) (Germany);
k. Grupo Astronomico Silos (Zaragoza, Spain);
l. Liga Ibero-Americana de Astronomia (South America);
m. Madrid Astronomical Association M1 (Spain);
n. Magyar Csillagászati Egyesület, Változócsillag Szakcsoport (Hungary);
o. Nederlandse Vereniging Voor Weeren Sterrenkunde, Werkgroep Veranderlijke Sterren (Netherlands);
p. Norsk Astronomisk Selskap, Variable Stjernegruppen (Norway);
q. Planetario e Observatorio Astronomico do Colegio Estadual do Paraná (Brazil);
r. Red de Observatores de Estrellas Variables—MIRA (Spain);
s. Royal Astronomical Society of Canada;
t. Royal Astronomical Society of New Zealand, Variable Star Section;
u. Sociedad Astronomica 'Syrma' (Valladolid, Spain);
v. Svensk Amator Astronomisk Forening, variabelsektionen (Sweden);
w. Ukraine Astronomical Group, Variable Star Section;
x. Uniao Brasileira de Astronomia, Variable Star Commission (Brazil);
y. Unione Astrofili Italiani (Italy);
z. Variable Star observers League in Japan;
aa. Vereniging Voor Sterrenkunde, Werkgroep Veranderlijke Sterren (Belgium).

7. Membership

At the 88th Spring Meeting, held in Toronto, Canada, on July 3, 1999, we elected 53 new members, 4 of whom joined as Sustaining members. A list of these new members appears on page 71 of Volume 28, No. 1, of the *Journal of the AAVSO*.

At the 88th Annual Meeting, held in Hyannis, MA, we elected 61 new members, two of whom joined as Sustaining members. A list of these new members appears in this issue of the *Journal* following the Minutes.

8. AAVSO publications

This year the following were published by the AAVSO:

a. *Journal of the AAVSO*, Vol. 27, Nos. 1 and 2, edited by Charles A. Whitney, with assistance from Elizabeth O. Waagen, and Lynn M. Anderson.

b. *AAVSO Newsletter*, Nos. 20–22, edited by Lynn M. Anderson.

c. *AAVSO Bulletin 62: 1999 Predicted Dates of Maxima and Minima of 561 Long Period Variables,* prepared by Janet A. Mattei, with assistance from Elizabeth O. Waagen.

d. *AAVSO Alert Notice*, Nos. 252–262, prepared by Janet A. Mattei, with assistance from Elizabeth O. Waagen.

e. *AAVSO News Flash*, No. 354–504, prepared by Janet A. Mattei, with assistance from Rebecca T. Pellock.

f. *AAVSO Circular*, Nos. 336–346, edited by John E. Bortle, with assistance from Charles E. Scovil and Robert Leitner.

g. *AAVSO Ephemeris for 1999 for Eclipsing Binaries,* prepared by Gerald Samolyk and Marvin E. Baldwin.

h. *AAVSO Ephemeris for 1999 for RR Lyrae Stars,* prepared by Gerald Samolyk and Marvin E. Baldwin.

i. *AAVSO Solar Bulletin*, Vol. 54, Nos. 9–12, Vol. 55, Nos. 1–8, edited by Joseph Lawrence, with assistance from Karuna Kramer and Grant Foster.

j. *AAVSO Sudden Ionospheric Disturbance Technical Report*, Vol. 9, No. 2, edited by Joseph Lawrence.

k. *AAVSO Photoelectric Photometry Newsletter*, Vol. 19, No. 1, edited by John R. Percy.

l. *AAVSO Eclipsing Binary Update*, No. 7, edited by David B. Williams.

m. *Observed Minima Timings of Eclipsing Binaries,* No. 5, prepared by Marvin E. Baldwin and Gerard Samolyk.

9. Other publications with AAVSO participation

a. "Multiwavelength Observations of the Symbiotic Star AG Dra during 1979–1995" by R. Viotti, R. Gonzalez-Riestra, F. Montagni, J. Mattei, M. Maesano, J. Greiner, M. Friedjung, and A. Altamore was published in *International Workshop: Supersoft X-Ray Sources*, 259; 1996.

b. "Anomalous Cooling of the Massive White Dwarf in U Geminorum Following a Narrow Dwarf Nova Outburst" by E. M. Sion, F. H. Chang, P. Szkody, W. Sparks, B. Gaensicke, M. Huang, and J. Mattei was published in the *Astrophysical Journal*, **496**, 449; 1998.

c. "Analysis of the Irregular Pulsations of AC Herculis" by Z. Kollath, J. R. Buchler, T. Serre, and J. Mattei was published in *Astronomy and Astrophysics*, **329**, 147; 1998.

d. "Variable Stars in Your Classroom" by J. R. Percy and J. A. Mattei was published in the *Journal of the Royal Astronomical Society of Canada*, **92**, 322; 1998.

e. "A Study of the Outbursts in SS Cygni" by J. K. Cannizzo and J. A. Mattei was published in the *Astrophysical Journal*, **505**, 344; 1998.

f. "Three Tests of the M Dependence of the AD Limit Cycle, Using Long-Term CV Photometry" by R. K. Honeycutt, J. W. Robertson, G. W. Turner, and J. A. Mattei was published in *Wild Stars in the Old West: 13th North American Workshop on Cataclysmic Variables and Related Objects*, ASP Conference Series 137; 1998.

g. "Trend Analysis of Long Period Variables" by J. A. Mattei and G. Foster was published in the *Bulletin of the American Astronomical Society*, **30**, 1322; 1998.

h. "Pulsation of LPVs and HIPPARCOS Data" by M.-O. Mennessier, D. Barthes, J. L. Vidal, and J. A. Mattei was published in *A Half-Century of Stellar Pulsation Interpretations*, ASP Conference Series 135; 1998.

i. "Long-Term Photometry of the Symbiotic Nova V1329 Cyg" by D. Chochol, I. L. Andronov, V. P. Arkhipova, L. L. Chinarova, J. Mattei, and S. Y. Shugarov was published in *Contributions of the Astronomical Observatory Skalnate Pleso*, **29**, 1, 31; 1999.

j. "The Light Curves of VY Scl Stars" by R. Leach, F. V. Hessman, A. R. King, R. Stehle, and J. Mattei was published in the *Monthly Notices of the Royal Astronomical Society*, **305**, 225L; 1999.

k. "X-Ray Observations through the Outburst Cycle of the Dwarf Nova YZ Cnc" by F. Verbunt, P. J. Wheatley, and J. A. Mattei was published in *Astronomy and Astrophysics*, **346**, 146; 1999.

l. “Multiperiodicity in Semiregular Variables. I. General Properties” by L. L. Kiss, K. Szatmary, R. R. Cadmus, Jr., and J. A. Mattei was published in *Astronomy and Astrophysics*, **346**, 542; 1999.

m. “The X-Ray Spectra of VW Hydri during the Outburst Cycle” by H. W. Hartmann, P. J. Wheatley, J. Heise, J. A. Mattei, and F. Verbunt was published in *Astronomy and Astrophysics*, **349**, 588; 1999.

n. “The Peculiar Binary V Sagittae: Properties of Its Long-Term Light Changes” by V. Simon and J. A. Mattei was published in *Astronomy and Astrophysics*, **139**, 75; 1999.

10. Meetings attended and talks given

10.1. Meetings attended

I attended the following scientific meetings during fiscal 1998–1999:

a. Making Connections: National Conference on Science, Mathematics, and Technology Education, November 1998, Baltimore, MD.

b. 193rd meeting of the American Astronomical Society, January 5–9, 1999, Austin, TX.

c. 8th UN/ESA Workshop on Basic Space Science: Scientific Explorations from Space, Mafraq, Jordan, March 13–17, 1999.

d. Symposium on Partnership in Astronomy, Astronomical Society of the Pacific, July 4–7, 1999, Toronto, Canada.

10.2. Talks given

I have given the following talks this year:

a. "Variable Stars and HOA for Independent Student Research," during the workshop on Astronomy Research: Bringing Astronomy into the Classroom and Fostering Independent Student Research, Making Connections, November 7, 1998, Baltimore, MD.

b. "Trend Analysis of Long Period Variables" (poster paper), 193rd American Astronomical Society meeting, January 5–9, 1999.

c. "Variable Stars in Research and Education," 8th UN/ESA Workshop, March 13–17, 1999.

d. 20-hour workshop on Variable Stars and HOA, Towards Other Planetary Systems (TOPS) Teachers Workshop, June 13–28, 1999.

e. "Partnership in Variable Star Observing and the AAVSO: An Example of Effective Partnership in Astronomy Research and Education," ASP Symposium, Toronto, Canada, July 5–7, 1999.

f. Focusing on HOA during the panel discussion on Research-Based Science Education: Using Professional and Amateur Astronomy Data and Procedures as Hands-On Science, ASP Symposium, July 5–7, 1999.

g. "AAVSO International Database and Archives," during a panel discussion on Archives, ASP Symposium, July 5–7, 1999.

h. "AAS Working Group on Professional-Amateur Collaboration," during a panel discussion on Forming and Facilitating Amateur-Professional Partnerships, ASP Symposium, July 5–7, 1999.

In addition, Ray Berg, Dan Kaiser, Gary Sampson, and Roger Kolman gave presentations in their communities on the AAVSO and HOA.

11. Personnel at Headquarters

Our association is extremely fortunate to have a very special group of people as staff at Headquarters.

This year we have had considerable number of turnovers in the staff—particularly in the area of office administration. I am happy to report that we have hired competent new staff persons and have re-organized some of the responsibilities so that we continue to serve our members and the astronomical community efficiently and effectively. I express my sincere appreciation and thanks to our dedicated, competent, hardworking, and team-spirited staff of the AAVSO: Elizabeth Waagen, my senior technical assistant; Rebecca Pellock, our technical assistant and meeting coordinator; Keriann Malatesta, our technical assistant; Michael Saladyga, our technical assistant; Gamze Menali, our technical assistant; Katherine Davis, our new technical assistant; Randal Milholland, our new system administrator and webmaster; Laurie Peterson, our new office manager and administrative assistant; Victor Gonzalez, our new administrative and membership assistant; Timothy Michalowski, our office assistant; Barbara Silva, our part-time data entry technician; Sara Beck, our part-time technical and administrative assistant; Lynn Anderson, production editor of our Journal and editor of our Newsletter; and Carl Feehrer, Frank McCorrison, and Arthur Ritchie, our loyal volunteers.

We have been fortunate to have several summer students assisting us this summer. My thanks to Michael Gutner, our technical assistant hired under the Margaret Mayall Assistantship program; Andrea Motta, our technical assistant; and Susan Friedell, our office assistant.

I also thank Aaron Price, who continues to assist us part-time with system administration and web activities.

12. Acknowledgements

I want to thank with deep feelings of appreciation and gratitude all those who have contributed so much to the Association this year.

We remember Clint Ford with fond memories and are grateful to him for providing us with our own Headquarters and with a legacy—the Clinton B. Ford Fund—that assure a sound future for the AAVSO.

We remember Margaret Mayall for her dedicated service to the AAVSO, for making it survive during very hard times, and for the bequest that she and Newton made to assure the sound future of the AAVSO.

Our appreciation and thanks go to our dedicated, devoted, and untiring observers, 623 of them around the world this year, the unsung heroes of the AAVSO who make this Association vital to variable star research. Special thanks to all those who have contributed to the *AAVSO News Flash*, and to our special observing programs.

Our thanks go to members who support the AAVSO with their dues; special thanks to those who are sponsoring the membership of an active observer, and to those who have generously contributed above their dues so that we can serve you, our members, and the astronomical community, well.

My sincere thanks and appreciation go to our Committee Chairpersons who give so generously of their time and wisdom to the Committee for which they are responsible. Thanks to: Gary Walker, Marv Baldwin, Rev. Ken Beckmann, Howard Landis, Joseph Lawrence, Charles Scovil, and Rev. Bob Evans.

I am grateful for, and appreciate, the support of our Vice Presidents Lee Anne Willson and Dan Kaiser, and our Council members: Bill Dillon, Peter Garnavich, Margarita Karovska, Kristine Larsen, Mario Motta, Msgr. Ron Royer, Doug Welch, and David Williams.

I especially thank Gary Walker, our President, and Martha Hazen, our Secretary.

I thank our past president, Al Holm, for the superb job he did in preparing and analyzing the recent AAVSO survey.

A special thanks to our new treasurer, Wayne Lowder, for his wisdom and time; to our accountant, Ann Saladyga, for her careful work and dedication; and to our past Treasurer, Ted Wales, for his help and expertise.

We have been fortunate to receive financial support from institutions, private foundations, and government agencies this year. We gratefully acknowledge the following:

Theodore Dunham grant from the Fund for Astrophysical Research for computer hardware to have a web site at AAVSO Headquarters;

Small Research Grant from the American Astronomical Society (AAS) to put all AAVSO charts on a compact disk (CD);

NASA grant for collaboration with Dr. Chris Mauche on multicolor observations of SS Cyg with HST, EUVE, and RXTE.

Our thanks go to Dr. Douglas Welch for effectively administering our active computer discussion group (aavso-discussion) and McMaster University for making its computer facilities available for this ongoing project.

Thanks go to Stamford Observatory for allowing Charles Scovil and John Griese to use the 22" telescope for making variable star observations, and for allowing Charles Scovil and Bob Leitner to use the facilities of the Observatory to prepare charts and the *AAVSO Circular*.

Our thanks to Dr. John Percy for his excellent editorship of the *AAVSO Photoelectric Photometry Newsletter*.

We are very fortunate to have the support of so many individuals and organizations!

Finally, my personal thanks to my husband Mike for his continuous understanding and support.

Table 1. AAVSO Observer Totals 1998–1999 by Country.

Country	*No. Observers*	*No. Obs.*	*Country*	*No. Observers*	*No. Obs.*
ARGENTINA	11	3206	ITALY	11	5528
ARUBA	1	663	JAPAN	3	2654
AUSTRALIA	9	6954	MALTA	1	199
AUSTRIA	2	538	NETHERLANDS	10	18896
BELGIUM	15	22160	NEW ZEALAND	2	134
BRAZIL	6	3336	NORTHERN IRELAND	1	1
BULGARIA	1	42	NORWAY	8	1431
CANADA	19	14857	PARAGUAY	1	24
CZECH REPUBLIC	2	769	POLAND	14	11914
DENMARK	6	8941	ROMANIA	4	4561
ENGLAND	13	18156	RUSSIA	2	116
FINLAND	5	6262	SLOVAKIA	1	253
FRANCE	35	11941	SOUTH AFRICA	17	19316
GERMANY	38	23831	SPAIN	25	4170
GREECE	6	3793	SWEDEN	1	139
HUNGARY	97	23022	SWITZERLAND	5	1694
INDIA	2	383	UKRAINE	11	2568
IRELAND	3	204	URUGUAY	3	181
ISLE OF MAN	1	11	USA	203	117435
ISRAEL	1	4	ZIMBABWE	27	317
			TOTAL	623	340,604

Table 2. AAVSO Observer Totals 1998–1999 USA by State or Territory.

State		*No. Observers*	*No. Obs.*	*State*		*No. Observers*	*No. Obs.*
ARIZONA	(AZ)	10	7049	NEBRASKA	(NE)	1	7
ARKANSAS	(AR)	2	327	NEVADA	(NV)	1	3
CALIFORNIA	(CA)	24	5280	NEW HAMPSHIRE	(NH)	1	29
COLORADO	(CO)	3	3826	NEW JERSEY	(NJ)	3	2555
CONNECTICUT	(CT)	8	2301	NEW MEXICO	(NM)	3	2250
FLORIDA	(FL)	5	5961	NEW YORK	(NY)	11	9641
GEORGIA	(GA)	4	8419	NORTH CAROLINA	(NC)	2	85
HAWAII	(HI)	1	137	OHIO	(OH)	7	2628
ILLINOIS	(IL)	18	8161	OKLAHOMA	(OK)	1	1
INDIANA	(IN)	6	11088	PENNSYLVANIA	(PA)	6	4077
IOWA	(IA)	6	574	PUERTO RICO	(PR)	2	378
KANSAS	(KS)	2	273	RHODE ISLAND	(RI)	5	3357
LOUISIANA	(LA)	1	14	TEXAS	(TX)	7	2268
MAINE	(ME)	4	3434	UTAH	(UT)	1	1114
MARYLAND	(MD)	4	1178	VIRGINIA	(VA)	3	2589
MASSACHUSETTS	(MA)	16	14938	WASHINGTON	(WA)	6	270
MICHIGAN	(MI)	8	1741	WEST VIRGINIA	(WV)	1	445
MINNESOTA	(MN)	5	1661	WISCONSIN	(WI)	9	8981
MISSOURI	(MO)	5	383	WYOMING	(WY)	1	12
				TOTAL		203	117,435

Table 3. AAVSO Observers, 1998–1999.

Code	*Name*	*No. Obs.*	*No. I.S.*	*Code*	*Name*	*No. Obs.*	*No. I.S.*
AAP	A. Abbott, Canada	1067	81	BQJ #	J. Bozsoky, Hungary	10	
ACH *	C. Accary, France	157		BMK	M. Bradbury, IN	114	2
ABB	B. Adams, CA	291	28	BTB	T. Bretl, MN	239	44
AB	W. Albrecht, HI	137	4	BHA ¶	H. Bretschneider, Germany	593	
ARL ⊗	R. Alencar Caldas, Brazil	375		BSM	S. Brincat, Malta	199	4
ALN	R. Allison, IA	273	52	BOS ‡	E. Broens, Belgium	54	10
ARF √	R. Alvarez Franco, Spain	38		BJQ	J. Brooks, CA	27	
AAA ⊗	A. Alves, Brazil	660		BBT	R. Browning, NJ	15	
ALR	L. Amburgey, MA	72	8	BOA *	A. Bruno, France	53	10
AEJ	E. Anderson, NY	720		BSQ	S. Budnik, NV	3	
ACL √	C. Andrade, Spain	1		BTH	T. Burrows, CA	1784	421
AJR	J. Andress, AZ	14		CAX √	A. Carrillo Alba, Spain	57	
AAY ¢	A. Androsuk, Ukraine	16		CNE +	N. Carson, Zimbabwe	5	1
AKT	T. Atkin, FL	915		CVJ λ	J. Carvajal Martinez, Spain	5	1
AJM *	J. Azema, France	23		CVR	R. Carver, Australia	161	3
BOZ #	B. Bago, Hungary	100	5	CLQ	L. Cason, VA	89	
BYM	M. Baisley, NY	4		CKN	K. Castle, AZ	184	6
BAH	A. Balcerek, Poland	25		CGN ⊗	G. Cerrutti, Uruguay	9	
BM	M. Baldwin, IN	6623		CNB ⊗	N. Cerrutti, Uruguay	137	
BIV #	I. Balogh, Hungary	1144		OCR ‡	O. Chretien, Belgium	61	
BHZ #	Zoltan Balogh, Hungary	16		CNT	D. Chantiles, CA	434	1
BZM #	Zsombor Balogh, Hungary	43		CGF	G. Chaple, MA	5307	2271
BGZ	G. Banialis, IL	5		CJL	J. Charles, MI	120	
BDI ¶	D. Bannuscher, Germany	334		CHZ +	H. Chinn, Zimbabwe	1	
BXA ¢	A. Baransky, Ukraine	895		CLK	W. Clark, MO	80	2
BEQ #	E. Barat, Hungary	6		CRX	R. Cnota, Poland	1172	
BSR @	S. Baroni, Italy	1026		CJU ^	J. Coco Lopez, Spain	369	
BCT *	C. Barret, France	38		CNL	O. Cole Arnal, Canada	90	
BQ #	L. Bartha, Hungary	349		COL	P. Collins, AZ	1014	
BSU ¶	U. Bastian, Germany	1		CME @	E. Colombo, Italy	384	
BPS +	P. Bastos, Zimbabwe	1		CBY ‡	B. Colyn, Belgium	25	
BBX	B. Beach, AR	2	1	CMG &	G. Comello, Netherlands	11523	1345
BBA	B. Beaman, IL	20	1	COO	L. Cook, CA	231	151
BZF #	Z. Bebesi, Hungary	9		CK	S. Cook, AR	325	
BGY +	M. Begbie, Zimbabwe	1	1	CTM	T. Cook, NY	31	
BOX √	O. Benitez Sanchez, Spain	23		COM +	T. Cooper, South Africa	7	
BTY	T. Benner, PA	192	45	CLZ *	L. Corp, France	10	
BTU	T. Beresky, MO	30		COV	V. Coulehan, NY	162	
BEB	R. Berg, IN	2938	6	CGD *	G. Coute, France	6	
BMM ‡	M. Biesmans, Belgium	638	287	CWD	D. Cowall, MD	98	4
BKN	A. Birkner, IL	12		CLX	L. Cox, Canada	85	
BIJ +	J. Black, Zimbabwe	1	1	CR	T. Cragg, Australia	2521	729
BAO #	A. Bodo, Hungary	2		CNK +	N. Croukamp, Zimbabwe	7	1
BNQ #	N. Boja, Hungary	12		CRR	R. Crumrine, NY	47	
BEC ¶	E. Born, Germany	50		CTD	T. Crute, GA	37	
BRJ	J. Bortle, NY	5375	2548	CBZ #	B. Csak, Hungary	29	
BBW	B. Bose, India	34		CJK #	J. Csanyi, Hungary	2	
BTW *	T. Boudoyen, France	12		CGB #	G. Cseri, Hungary	21	
BMU &	R. Bouma, Netherlands	1935	11	CTI #	T. Csorgei, Hungary	37	
BPI *	P. Bourret, France	30		CSM #	M. Csukas, Romania	167	8

Table 3. AAVSO Observers, 1998–1999, cont.

Code	*Name*	*No. Obs.*	*No. I.S.*	*Code*	*Name*	*No. Obs.*	*No. I.S.*
CKB	B. Cudnik, TX	334		GMB	M. Gable, OH	613	
CAZ #	A. Czoch, Hungary	16		GBZ	O. Gabzo, Israel	4	
DMI ¶	M. Dahm, Germany	286		GEC	E. Gale, IA	95	
DSG @	S. Dallaporta, Italy	396		GDX *	D. Gamero, France	24	
DAQ #	A. Dan, Hungary	1	1	GDO λ	D. Garcia, Spain	3	
DJS	J. Day, England	78		GFE ⊗	Federico Garcia, Argentina	137	
DRC √	F. Del Rosario, Spain	5		GPA λ	Francisco Garcia, Spain	5	2
DVA	D. Del Valle, PR	352		GAJ ⊗	J. Garcia, Argentina	1111	
DFR	F. Dempsey, Canada	163		GAA	P. Garey, IL	11	1
DAY ¢	A. Deputatov, Ukraine	150		GGR +	G. Gargan, Zimbabwe	2	
DNO	O. Deren, Poland	2068		GIS #	I. Gavlik, Hungary	4	
DVC +	C. De Villiers, South Africa	71		GAX ¶	A. Gellrich, Germany	18	
DVI +	F. De Villiers, South Africa	104		GVL	V. Genkov, Bulgaria	42	
DHN ¶	H. Diederich, Germany	12		GSX +	S. George, Zimbabwe	1	
DPA ‡	A. Diepvens, Belgium	4431	291	GCP ¶	C. Gerber, Germany	1830	
DRG	R. Diethelm, Switzerland	869	638	GBT #	B. Gere, Hungary	6	
DRD	R. Dietz, CO	1		GGU &	G. Gilein, Netherlands	157	
DLA	A. Dill, KS	239		GMC	M. Gill, England	34	
DIL	W. Dillon, TX	14	1	GVN	V. Giovannone, NY	57	
DPL	P. Dombrowski, CT	781	217	GMY	M. Glennon, Ireland	27	
DZS ⊗	S. Dominguez, Argentina	465		GHA ¶	H. Goldhahn, Germany	1404	
DEH	E. Donaghy, WY	12	1	GIN √	I. Gomez, Spain	26	
DPV	P. Dubovsky, Slovakia	253	32	GZN *	A. Gonzales-Herrera, Spain	11	
DMB ξ	M. Duenas Becerril, Spain	18		GNI *	N. Gonzalez, Spain	8	
DGX #	G. Dulichar, Hungary	14		GKA	K. Graham, IL	137	8
DMO *	M. Dumont, France	164		GRL $	B. Granslo, Norway	500	8
DKS	S. Dvorak, FL	2838	505	GAT	A. Green, MA	212	
DGP	G. Dyck, MA	5481	3861	GRW	D. Green, MA	124	
EAD #	A. Ecsedi, Hungary	18		GRI	J. Griesé, CT	232	145
EPE ¶	P. Enskonatus, Germany	258		GOC	R. Grochowski, Poland	6	
EJO #	J. Erdei, Hungary	1831	55	GDU	D. Grubb, IL	2	
FMA @	M. Fadda, Italy	324		GCT ∉	C. Grunnet, Denmark	318	
FMX	F. Farrell, Australia	5		GPR	P. Guilbault, RI	2229	12
FCA	C. Fausel, IN	70		GUN *	J. Gunther, France	2110	346
FKJ #	J. Fekete, Hungary	208		GGX *	G. Guzman, France	140	
FNI ¢	N. Felbaba, Ukraine	142		GMW +	M. Gwashure, Zimbabwe	1	
FRF #	R. Fidrich, Hungary	762	6	HCS #	C. Hadhazi, Hungary	2695	
FSJ *	J.-L. Fis, France	36	12	HTY	T. Hager, CT	84	22
FSE @	S. Foglia, Italy	3241		HK	E. Halbach, CO	3811	96
FFC #	F. Foldesi, Hungary	130	1	HMG #	G. Halmi, Hungary	32	
FJT *	J. Fontalba, France	156		HDW	D. Hamilton, NE	7	
FT	G. Fortier, Canada	111	2	HP	W. Hampton, CT	86	
FWD	W. Fortune, IA	11	2	HDX	D. Hands, NC	22	
FRL	R. Fournier, OH	19		HAN	J. Hannon, CT	302	300
FXJ	J. Fox, MN	100	2	HSG	G. Hanson, AZ	4967	3420
FMC *	M. Frangeul, France	16		HAV	R. Harvan, MD	497	111
FBN +	B. Fraser, South Africa	109		HBL ¶	B. Hassforther, Germany	506	
FAG @	A. Frigo, Italy	10		HAI	A. Hastings, MA	20	
FMG	G. Fugman, IA	67	2	HJP	J. Hatton, France	7	
GJL #	J. Gaal, Hungary	5		HHU ‡	H. Hautecler, Belgium	365	

Table 3. AAVSO Observers, 1998–1999, cont.

Code	*Name*	*No. Obs.*	*No. I.S.*	*Code*	*Name*	*No. Obs.*	*No. I.S.*
HAB	R. Hays, IL	1472		KB	W. Kaminski, NM	1079	390
HZL	L. Hazel, NY	234	71	KPQ #	P. Kanyo, Hungary	4	
HY	A. Heasley, FL	2		KTQ	T. Karmo, Canada	2	
HGQ #	G. Hegedus, Hungary	3		KAD #	A. Karpati, Hungary	45	
HPA ∇	P. Heinonen, Finland	7		KKI	K. Kasai, Switzerland	476	
FYE	E. Heironimus, MO	3		KAX +	A. Kashula, Zimbabwe	1	1
HJN +	J. Hers, South Africa	537	69	KDI	D. Kell, WA	2	
HES	C. Hesseltine, WI	152		KIV #	I. Kelley, Hungary	6	
HEV #	Z. Hevesi, Hungary	34		KZX #	Z. Kereszty, Hungary	3	2
HRI	R. Hill, AZ	120		KZD #	D. Keszthelyi, Hungary	45	
HED	D. Himes, OH	240	16	KSZ #	S. Keszthelyi, Hungary	5	
HZR ¶	R. Hinzpeter, Germany	418		KRB	R. King, MN	677	179
HIR	Y. Hirasawa, Japan	1827	113	KTO ∇	T. Kinnunen, Finland	5625	3685
HWD	W. Hodgson, Australia	26		KHN #	H. Kiss, Hungary	53	
HSY $	S. Hoeydalsvik, Norway	75		KIL #	L. Kiss, Hungary	1468	16
HFO *	G. Hoffer, France	87		KZA *	A. Klotz, France	3	
HBA ¶	A. Holbe, Germany	2335		KPL	P. Kneipp, LA	14	
HXA	A. Hollander, CA	11	1	KGT	G. Knight, ME	39	
HXR +	R. Holman, Zimbabwe	2		KSP	S. Knight, ME	48	4
HJO &	J. Holtrop, Netherlands	6		KS	J. Knowles, RI	577	
HZJ	J. Holtz, PA	338		KOC #	A. Kocsis, Hungary	857	25
HOO &	G. Hoogeveen, Netherlands	49		KDL ¶	D. Koehn, Germany	63	
HAZ #	A. Horvat, Hungary	4		KHL	M. Kohl, Switzerland	243	1
HFE #	F. Horvath, Hungary	15		KRS	R. Kolman, IL	2061	174
HLI #	L. Horvath, Hungary	8		KMA	M. Komorous, Canada	1850	94
HTB #	T. Horvath, Hungary	1		KGG	G. Koralewski, Poland	107	
HOA	A. Howell, GA	11	10	KOS	A. Kosa-Kiss, Romania	2524	
HDU	D. Hurdis, RI	40		KVS #	A. Kovacs, Hungary	24	
HUR	G. Hurst, England	1164	156	KVI #	I. Kovacs, Hungary	124	7
HUZ	R. Huziak, Canada	2284	41	KTB #	T. Kovacs, Hungary	1583	
IRM √	R. Iglesias Marzoa, Spain	164		KGV #	G. Kovago, Hungary	3	
IPA	P. Ingrassia, Argentina	41		KWO ¶	W. Kriebel, Germany	137	19
IVM	V. Ivanov, Russia	24		KIS ¶	G. Krisch, Germany	2626	28
IFJ %	F. Ives, New Zealand	131		KRK	K. Krisciunas, WA	59	59
JTP *	P. Jacquet, France	292	19	KMK	M. Krolik, Poland	260	
JM	R. James, NM	820		KTZ	T. Krzyt, Poland	328	
JSI	S. Jenner, England	17		KGQ #	G. Kurucz, Hungary	16	
JKK $	K. Jensen, Norway	92		LTO ¶	T. Lange, Germany	1454	
JLT ∉	L. Jensen, Denmark	8191	3152	LMF	M. Lara, Brazil	218	
JRJ &	R. Johanns, Netherlands	4593	481	LSK	S. Lascowski, WI	47	
JMR	M. Johns, MO	4		LVA $	A. Lauvstad, Norway	4	
JOG	G. Johnson, MD	265	1	LZT	T. Lazuka, IL	1021	
JRA	R. Johnson, MN	34		LEB *	R. Lebert, France	152	
JON ‡	K. Jonckheere, Belgium	4		LNZ	G. Lenz, CT	407	
JA %	A. Jones, New Zealand	3		LJL	J. Leonard, IL	117	
JCN	C. Jones, England	874	423	LGE *	G. Letellier, France	56	
JPK +	P. Jones, Zimbabwe	1		LEV	A. Leveque, CA	130	
JRW +	R. Jones, South Africa	383		LVY	D. Levy, AZ	103	86
JSH	S. Jones, MA	19		LJA ‡	J. Leyssens, Belgium	4	
JAZ #	A. Juhasz, Hungary	83		LSM	S. Linscott, TX	8	

Table 3. AAVSO Observers, 1998–1999, cont.

Code	Name	No. Obs.	No. I.S.
LLZ #	L. Liziczai, Hungary	11	
LTE +	T. Lloyd Evans, South Africa	87	
LOB λ	J. Lobo-Rodriguez, Spain	59	
LJT +	J. Long, Zimbabwe	1	
LEQ	E. Lopata, CA	10	
LRD	D. Loring, UT	1114	
LEJ	E. Los, NH	29	
LRG √	R. Losada Menendez, Spain	160	
LML ξ	M. Lou, Spain	7	
LMS	M. Loucas, Greece	457	
LTB	T. Lubbers, MN	611	
LBG	G. Lubcke, WI	1987	
LKA	K. Luedeke, NM	351	
LJU	J. Luengo, PA	678	
LHU +	H. Lund, South Africa	66	
LME	M. Lyons, England	387	
MDW	W. MacDonald, Canada	284	39
MAU	A. Maciolek, MI	3	1
MQA ¢	Alexandr Maidyk, Ukraine	791	
MZA ¢	Anastasia Maidyk, Ukraine	49	
MQN ¢	N. Maidyk, Ukraine	278	
MVL ¢	V. Maidyk, Ukraine	6	
MZG ¶	G. Maintz, Germany	409	
MLI	L. Maisler, NY	235	10
MNV ¢	N. Maksimenko, Ukraine	94	
MPH	P. Manker, GA	165	
MKE	R. Manske, WI	61	3
MZY #	Z. Margyarics, Hungary	42	
MQM +	A. Markham, Zimbabwe	2	
MKW	A. Markiewicz, Poland	812	
MXS #	S. Marosi, Hungary	213	
MQR	Robert Martin, IL	16	
MXR	Russell Martin, MD	318	
MRX ¶	H. Marx, Germany	1028	137
MN	H. Mason, CA	264	
MAV	D. Matsnev, Russia	92	
MMZ %	M. Mattiazzo, Australia	46	
MPR ¶	P. Maurer, Germany	774	31
MGE	G. Mavrofridis, Greece	1775	9
MJW	J. Mayer, PA	1585	88
MGU	T. McCague, IL	10	
MQC	Q. McCleery, NC	63	
MDP	P. McDonald, Canada	770	66
MGH	H. McGee, England	1545	343
MJP	P. McJunkins, TX	1	
MKJ	J. McKenna, NJ	1270	250
MIB $	I. Mediaas, Norway	6	
MED	K. Medway, England	1793	
MHI	H. Menali, MA	61	
MSC +	C. Mesu, Zimbabwe	100	
MYJ ¶	A. Meyi, Germany	4	
MLH +	L. Mhlanga, Zimbabwe	2	
MTK	T. Michalik, VA	340	
MOK $	O. Midtskogen, Norway	642	77
MWY +	W. Miller, Zimbabwe	1	
MKD	K. Millyard, Canada	47	15
MZS #	A. Mizser, Hungary	441	3
MCE	E. Mochizuki, Japan	46	
MRV	R. Modic, OH	1625	804
MQH +	A. Mohamed, Zimbabwe	3	
MOL	J. Molnar, VA	2160	
MLF +	B. Monard, South Africa	3400	1178
MOW	W. Morrison, Canada	5553	325
MSL	T. Moseley, Northern Ireland	1	
MKH	S. Mukherjee, India	349	
MMU	M. Munkacsy, RI	467	
MUY ‡	E. Muyllaert, Belgium	5472	1602
NEV #	E. Nagy, Hungary	6	
NZO #	Z. Nagy, Hungary	51	
NMA #	A. Nagy-Melikuti, Hungary	17	
NLB #	L. Nemeth, Hungary	475	3
NJO ¶	J. Neumann, Germany	1409	
NFD &	F. Nieuwenhout, Netherlands	68	
NPM	P. Norris, MA	2	
NHK ∇	H. Nylander, Finland	78	3
OCN	S. O'Connor, Canada	1105	752
OMA	M. Oefelein, IL	1513	
OFA	A. O'Fearghail, Ireland	41	3
OJO ∉	J. Olesen, Denmark	141	
ONJ	J. O'Neill, Ireland	136	
OV	E. Oravec, NY	2451	
ORY +	R. Osborne, Zimbabwe	2	
OPR	P. Ossowski, Poland	12	
OSV #	L. Osvald, Hungary	55	
OPV #	P. Osvath, Hungary	1	
OSE	S. Otero, Argentina	461	
OJJ	J. Ott, CO	14	
OB +	D. Overbeek, So. Africa	12525	11
PLA	A. Padilla Filho, Brazil	988	
POZ #	O. Palinko, Hungary	9	
PPS #	S. Papp, Hungary	2587	217
PMW	M. Paradowski, Poland	1	
PCD *	C. Pardanaud, France	4	
PLI @	L. Parmeggiani, Italy	1	
PAZ #	A. Pasztoy, Hungary	2	
PEX	A. Pearce, Australia	21	12
PN	A. Pearlmutter, MA	47	
PTI	N. Peattie, CA	130	
PPB ⊗	P. Pecorelli, Argentina	717	
PEI ∉	E. Pedersen, Denmark	104	1

Table 3. AAVSO Observers, 1998–1999, cont.

Code	Name	No. Obs.	No. I.S.
PEG *	C. Peguet, France	130	
PWD	W. Pellerin, TX	20	
PFD ⊗	F. Pfaffendorf, Argentina	4	
PKT	J. Pickett, AZ	226	41
PYS ‡	Y. Piersman, Belgium	49	
PEY	E. Piggott, AZ	68	
PGU @	G. Pinazzi, Italy	121	
PSB #	S. Pinter, Hungary	4	
PPL	P. Plante, OH	118	
AST	R. Podesta, Paraguay	24	
PFN +	F. Podmore, Zimbabwe	1	1
PCI #	C. Polgar, Hungary	6	
PLT ∉	L. Poort, Denmark	25	
POH ¶	T. Posch, Germany	8	
PGG #	G. Posztpisl, Hungary	26	
PWR	R. Powaski, OH	13	
POX	M. Poxon, England	1360	248
PYG	G. Poyner, England	10839	7204
PGX @	G. Pozzi, Italy	8	
PDO	D. Pray, RI	44	
PAH	A. Price, MA	2	
PDW +	D. Pringle-Wood, Zimbabwe	2	
PEF @	E. Prosperi, Italy	13	13
PDQ *	D. Proust, France	29	
PUJ λ	F. Pujol, Spain	203	52
PCH	C. Pullen, CA	51	
PFR #	F. Puskas, Hungary	1355	
QW ¶	W. Quester, Germany	7	
RJZ #	J. Racz, Hungary	6	
RKE ¶	K. Raetz, Germany	577	
RCH *	C. Ramillon, France	1124	
RRB	R. Raphael, ME	829	212
RSX +	S. Ratanje, Zimbabwe	3	
RMX √	M. Regalado Querol, Spain	12	
RZS #	Z. Reiczigel, Hungary	37	
REP	P. Reinhard, Austria	368	
RFP	P. Reis-Fernandes, Brazil	251	
RQ	C. Ricker, MI	117	
RRZ #	R. Ricza, Hungary	1484	
OJR λ	J. Ripero Osorio, Spain	2295	649
RAS ⊗	A. Risi, Argentina	10	
RBA	B. Risman, Canada	7	
RZD λ	D. Rodriguez, Spain	2	2
RMU υ	M. Rodriguez Marco, Spain	103	6
ROE	J. Roe, MO	266	
RBC #	B. Romsics, Hungary	13	
ROG	G. Ross, MI	176	100
RJQ	J. Rowe, Canada	16	
RR	R. Royer, CA	395	148
RFN #	F. Rozsa, Hungary	1	
RMZ #	M. Rozsahegyi, Hungary	1	1
RJV *	J. Ruiz Fernandez, Spain	398	
RPH	H. Rumball-Petre, CA	19	
SJU *	J.-L. Saint-Jouan, France	1	
SJQ	A. Sajtz, Romania	915	
SSU	S. Sakuma, Japan	781	94
SEQ *	E. Salazar-Garces, France	97	
SQL ⊗	R. Salvo, Uruguay	35	
SAH	G. Samolyk, WI	6185	
SGX #	G. Santa, Hungary	938	2
STC	G. Santacana, PR	26	
SYA √	A. Santana Robaina, Spain	4	
SQQ ⊗	M. Santander, Argentina	5	
SQI ⊗	M. Santarossa, Argentina	3	
SYN *	Y. Santens, France	12	
SPQ #	C. Sapi, Hungary	17	
SKI #	K. Sarneczky, Hungary	301	21
SGE	G. Sarty, Canada	21	
SXK ¶	M. Schabacher, Germany	247	1
SDY ¶	D. Scharnhorst, Germany	204	36
SXT	T. Schieding, MA	175	
SPK ¶	P. Schmeer, Germany	53	
SHV #	A. Schmidt, Hungary	1894	15
SQR	R. Schmude, GA	8206	1
SAQ &	A. Scholten, Netherlands	2	
SLZ ¶	G.-L. Schott, Germany	9	
SHX ¶	H. Schubert, Germany	46	
SCZ *	E. Schweitzer, France	277	2
SBQ	B. Scott, MI	552	
SCE	C. Scovil, CT	91	41
SYL #	L. Sebok, Hungary	1	
SPB #	P. Sebok, Hungary	7	
SVJ	J. Seever, IL	5	
SDF	D. Shackleford, CA	91	
SHS	S. Sharpe, ME	2518	5
SSA	A. Sharpless, WA	97	
SQN	L. Shaw, CA	606	245
SHW	W. Sherman, IN	1	
SBN	A. Silva Barros, Brazil	844	
SNE	N. Simmons, WI	13	
SXN	M. Simonsen, MI	603	125
SXE	P. Simou, Greece	8	
SBI #	B. Sipocz, Hungary	5	
SKU #	J. Skobrak, Hungary	2	
SDN	D. Slauson, IA	91	
SLQ	L. Smelcer, Czech Republic	690	4
SJX +	J. Smit, South Africa	1737	
SMI	A. Smith, England	10	5
SDZ	D. Smith, AZ	288	
SHA	H. Smith, MI	51	

Table 3. AAVSO Observers, 1998–1999, cont.

Code	Name	No. Obs.	No. I.S.	Code	Name	No. Obs.	No. I.S.
SJE	J. Smith, CA	183		TOZ #	Z. Toth, Hungary	104	5
SMQ	M. Smith, AZ	65		TSC	S. Tracy, CT	318	133
SXL @	M. Solarino, Italy	4		TRF	C. Trefzger, Switzerland	104	36
SBV #	B. Somosvari, Hungary	10		TDM	D. Troiani, IL	23	3
SBX #	A. Sonka, Romania	955		TRO $	O. Trondal, Norway	51	20
SOH ∉	H. Sorensen, Denmark	162		TUB #	V. Tuboly, Hungary	174	1
SXC	C. Sousa, MA	11		TUC +	C. Turk, South Africa	130	
SJZ	J. Speil, Poland	1741		TYS	R. Tyson, NY	325	
SPC	C. Spell, WA	6		UND	E. Underhay, CA	33	
SPO $	J. Spongsveen, Norway	61		VFR *	F. Vaclic, Czech Republic	79	
STR	R. Stanton, CA	149	136	VLN *	L. Vadrot, France	74	
SVD	V. Steblina, WA	105	7	BVE &	E. Van Ballegoij, Aruba	663	
SKS	T. Steckner, Canada	2		VDH &	H. Van Den Hil, Netherlands	6	
SXH	H. Steele, WI	9		VDL ‡	J. Van Der Looy, Belgium	3482	1
STF	G. Stefanopoulos, Greece	1000		VDE &	E. Van Dijk, Netherlands	557	5
SAA	A. Stephan, FL	39		VHD ‡	D. Van Hessche, Belgium	49	1
SET	C. Stephan, FL	2167	26	VIP ‡	P. Van Iersel, Netherlands	2	
SWT	R. Stewart, NJ	1270	424	VNL ‡	F. Van Loo, Belgium	7522	51
STQ	N. Stoikidis, Greece	137		VMT ‡	T. Vanmunster, Belgium	2	2
SDI	D. Storey, Isle Of Man	11		VBQ #	B. Varga, Hungary	2	
SHZ ¶	H. Struever, Germany	61		VSB *	S. Vasselle, France	610	
SYD +	M. Strydom, Zimbabwe	2		VBE *	B. Vatant, France	15	
SRX %	R. Stubbings, Australia	3674	2071	VED *	P. Vedrenne, France	4332	5
SQO	R. Stuber, IL	526		VPE ¢	P. Veleshchuk, Ukraine	47	
SUK	M. Stuka, CA	13		VKR ¢	K. Velikazova, Ukraine	100	
SAC ¶	A. Sturm, Germany	223		VET *	M. Verdenet, France	1497	794
SUX √	M. Suarez Tejera, Spain	194	1	VIA *	J. Vialle, France	7	
SUS ¶	D. Suessmann, Germany	1094		VAN ¶	A. Viertel, Germany	192	
SYT +	T. Suleman, Zimbabwe	3		VII #	I. Vincze, Hungary	2	
SQC	C. Suslavage, CA	48		VKZ #	K. Virga, Hungary	3	
SWV	D. Swann, TX	463		VJA ∇	J. Virtanen, Finland	53	1
SSW	S. Swierczynski, Poland	4385		VGK	G. Vithoulkas, Greece	416	
SDX	D. Sworin, CA	265	84	VFK ¶	F. Vohla, Germany	4775	19
SSH #	Gabor Szabo, Hungary	51		VOL	W. Vollmann, Austria	170	8
SGO #	Gyula Szabo, Hungary	110	1	VMD +	D. Von Memerty, Zimbabwe	2	
SZW	R. Szaj, Poland	994	69	VVI #	V. Voroshazi, Hungary	35	
SAO #	A. Szauer, Hungary	211		WGR	G. Walker, MA	29	
SLY #	L. Szegedi, Hungary	334		WSM +	S. Walsh, Zimbabwe	168	9
TPJ #	P. Tamas, Hungary	1		WFR ¶	F. Walter, Germany	189	
TAZ #	A. Tari, Hungary	15		WRS	R. Watt, PA	35	
TCS #	C. Tari, Hungary	3		WER	R. Weber, KS	34	
TDB	D. Taylor, Canada	454	154	WPT +	P. Wedepohl, South Africa	158	
THR	R. Thompson, Canada	946		WEI	D. Weier, WI	519	173
THU *	B. Thouet, France	247	1	WMC	M. Weier, WI	8	2
TKK ∇	K. Tikkanen, Finland	499		WC	R. Wend, IL	1195	
TIA #	A. Timar, Hungary	10		WEF	F. West, PA	1249	
TVG ⊗	V. Tombotto, Argentina	252		WJD	J. West, OK	1	
TST	S. Toothman, IL	15		WDM §	M. Westlund, Sweden	139	1
TZK #	Z. Torok, Hungary	1		WKM	M. Wiskirken, WA	1	
TTK #	K. Toth, Hungary	37		WI	D. Williams, IN	1342	

Table 3. AAVSO Observers, 1998–1999, cont.

Code	Name	No. Obs.	No. I.S.	Code	Name	No. Obs.	No. I.S.
WJL	J. Williams, CA	7		YRK	D. York, TX	1428	935
WPX	P. Williams, Australia	411	218	YKA	K. Young, CA	22	
WRX	R. Williams, MI	119	5	YNV +	N. Young, South Africa	2	
WSN	T. Wilson, WV	445	168	YSD	S. Young, MA	31	
WSO +	S. Watson, Zimbabwe	1		ZAG #	G. Zajacz, Hungary	25	
WWJ	W. Wilson, England	54		ZLT #	T. Zalezsak, Australia	89	6
WUL¶	U. Witt, Germany	110		ZWD	W. Zeilstra, IA	37	
WTW	J.-M. Wittwer, Switzerland	2		ZRE	R. Zissell, MA	3345	1414
WJM	J. Wood, CA	86		ZKM	K. Zloczewski, Poland	3	
WBK	B. Worraker, England	1					

These symbols indicate observers are also affiliated with the groups below:

^ Agrupacia Astronomica Albireo of Seville (Spain)
√ Asociacion de Variabilistas de Espagne (Spain)
* Association Française des Observateurs d'Étoiles Variables (France)
+ Astronomical Society of Southern Africa, Variable Star Section
∉ Astronomisk Selskab (Scandinavia)
¶ Bundesdeutsche Arbeitsgemeinschaft für Veränderliche Sterne E.V. (BAV) (Germany)
ξ Grupo Astronomico Silos (Zaragoza, Spain)
⊗ Liga Ibero-Americana de Astronomia (South America)
λ Madrid Astronomical Association M1 (Spain)
Magyar Csillagàszati Egyesület, Változócsillag Szakcsoport (Hungary)
& Nederlandse Vereniging Voor Weer-en Sterrenkunde, Werkgroep Veranderlijke Sterren (Netherlands)
$ Norwegian Astronomical Society, Variable Star Section
% Royal Astronomical Society of New Zealand, Variable Star Section
υ Sociedad Astronomica 'Syrma' (Valladolid, Spain)
§ Svensk Amator Astronomisk Förening, Variabelsektionen (Sweden)
¢ Ukraine Astronomical Group, Variable Star Section
@ Unione Astrofili Italiani (Italy)
∇ Ursa Astronomical Association, Variable Star Section (Finland)
‡ Vereniging Voor Sterrenkunde, Werkgroep Veranderlijke Sterren (Belgium)

Table 4. Observation statistics for fiscal year 1998–1999 (see Figures 5, 6, and 7).

Observations (increments of 1000)	No. Observations per increment	% of All Observations	No. Observers per increment
1–999	77579	23%	532
1000–1999	66755	19%	47
2000–2999	43407	13%	18
3000–3999	20953	6%	6
4000–4999	27483	8%	6
5000–5999	32813	10%	6
6000–6999	12808	4%	2
7000–7999	7522	2%	1
8000–8999	16397	5%	2
9000–9999	0	0%	0
10, 000+	34887	10%	3

Table 5. Individuals requesting AAVSO data during fiscal year 1998-1999.*

Name	*Affiliation/Location*
B. Adhikary	Nepal
M. A. Aimouche	Al-Biruni Astronomy Club, Algeria
J. Alberghini (2)	Natick, MA
E. Almkvist	?
R. Alvarez	Universite Libre de Bruxelles, Belgium
I. Andronov	Odessa State University, Ukraine
H. Andrzejewski	Niagara Falls, NY
A. Antov	Bulgarian Academy of Sciences, Bulgaria
?. Arisa	Taipei American School, Taiwan
J. Armstrong	University of Washington, WA
M. Asplund	Encyclopedia of Astronomy and Astrophysics, Denmark
A. Aversano	Massapequa, NY
J. Bailey	University of Wyoming, WY
R. Baptista	Universidade Federal de Sta Catarina, Brazil
D. Barthes	Barcelona University, Spain
D. Baskill	Leicester University, UK
U. Bastian	University of Heidelberg, Germany
B. Beach	Arkansas Tech University, AK
?. Beavman	?
T. Bedding (2)	University of Sydney, Australia
V. Beffa	Stanford University, CA
D. Benatti	Natick, MA
P. Benitez	University de Extremadura, Badajoz, Spain
B. Berman	Discover Magazine
A. Bertocco	Italy
I. Black	?
H. Boffin	Royal Observatory of Belgium
C. Boles	Rochester, NH
B. Boroson	NASA Goddard Space Flight Center, MD
M. Bottner	La Crosse, Wisconsin
J. Bryant	Ball State University, IN
R. Buchler	University of Florida, FL
W. Buning	Gramsbergen, Netherlands
J. Cami	University of Amsterdam, Netherlands
J. Cano	Sevilla, Spain
G. Chapman	NSW, Australia
D. Cihanowyz	Elizabethtown, NC
M. Cioto (2)	Natick, MA
M. Clark	Jamestown, NY
G. Clayton (2)	Louisiana State University, LA
H. Collin	University of Hawaii, HI
A. Cooper	Tucson Amateur Astronomy Association, AZ
C. Craig	Quincy, MA
M. Creech-Eakman	California Institute of Technology, CA
M. Crocker	Nuffield Radio Astronomy Labs, UK
A. Darriba	Madrid, Spain
B. Davis	Iowa City, IA
R. Dell (4)	Piedmont, CA

**List does not include individuals obtaining data or information directly from the AAVSO website. A number in parentheses after the name indicates multiple requests.*

Table 5. Individuals requesting AAVSO data during fiscal year 1998-1999, cont.

Name	*Affiliation/Location*
P. Diamond	National Radio Astronomy Observatory, NM
J. Dire	U. S. Coast Guard Academy, CT
P. DiTuro	Villanova, PA
M. Dombrowksi	Glastonbury, CT
B. Donahue	Somerville, MA
V. T. Doroshenko	Sternberg Astronomical Institute, Moscow University, Russia
C. Drolet	RASC, Quebec Centre, Canada
A. Dupree	Smithsonian Astrophysical Observatory, MA
S. Dvorak	Clermont, FL
G. Dyck	Assonet, MA
Y. Efimov (2)	Sternberg Astronomical Institute, Moscow University, Russia
E. Eisenstadt	Brooklyn, New York
M. Feltz	??
E. Finn	Qunicy, MA
W. Flatter	Barnard-Seyfert Astronomical Society, TN
L. French (2)	Wheelock College, MA
D. Frew	Northern Sydney Astronomical Society, Australia
J. Frutti	Ontario, Canada
T. Fuller	UCSB Physics Learning Center, U. California, Santa Barbara
B. Gaensicke	Universitaetssternwarte Goettingen, Germany
R. Garrison (2)	University of Toronto, Canada
A. Giambersio	Italy
J. Greaves (3)	Northampton, UK
A. Green (2)	Lexington, MA
D. Green (3)	IAU Circulars, Central Bureau for Ast. Telegrams, Cambridge, MA
A. Guller	Turkey
M. Haapala	Eau Claire, WI
B. Hakes	Peoria, IL
A. Halevin	Odessa, Ukraine
B. Hamon	Mobile, AL
Z. Hamza	Algiers, Algeria
S. Hanson	Woodinville, WA
P. Harderson	Rensselaer Polytechnic Institute, NY
E. Harlaftis (2)	National Observatory of Athens, Greece
J. Harper (2)	Redmond, WA
W. Hartmann	Sron, Netherlands
G. Hays	Los Angeles Astronomical Society, CA
M. Hazen	Harvard-Smithsonian Center for Astrophysics, Cambridge, MA
K. Hofmann	Max-Planck Institute for Radio Astronomy, Bonn, Germany
Y. Holmes	Pittsburgh, PA
R. Hull	MIT Lincoln Laboratory, Cambridge, MA
R. Humphreys	University of Minnesota, MN
G. Hyland	Oakton, VA
C. Jenkins	Oakville, ON, Canada
R. Kaitchuck	Ball State University, Muncie, IN
S. Kannappan	Harvard University, Cambridge, MA
M. Karovska (2)	Harvard-Smithsonian Center for Astrophysics, Cambridge, MA
S. Kenyon (2)	Harvard-Smithsonian Center for Astrophysics, Cambridge, MA
F. Kerber	European Southern Observatory, Garching, Germany
S. Kervyn	Joplin, MO
I. Kilic	University of Akcakoca, Turkey

Table 5. Individuals requesting AAVSO data during fiscal year 1998-1999, cont.

Name	*Affiliation/Location*
D. Kingsley	Stanford, CA
T. Kipper	Tartu Observatory, Estonia
L. Kiss	University of Szeged, Hungary
P. Kortenkamp	University of Iowa, Iowa City
H. Krimm	Hampden-Sydney College, VA
E. Kuulkers	Sron, Utrecht, Netherlands
S. J. Lean	London, England
T. Lebzelter (2)	Institut f. Astronomie, University of Vienna, Austria
S. Lee	Teaduk Radio Astronomy Observatory, Korea
L. Leedjarv	Tartu Observatory, Estonia
S. Leonini	Unione Astrofili Senesi, Italy
Z. Li	Nanjing University, China
W. Liller	Renaca, Vina del Mar, Chile
M. Lindqvist	Onsala Space Observatory, Sweden
J. Liska (2)	David Dunlop Observatory, University of Toronto, Canada
M. Lopez	Laguna Paiva, Santa Fe, Argentina
J. Love	Science Explained, Scotland
D. Lynch	The Aerospace Corporation
M. Lysaght	Dept. Physics and Astronomy, U. Mass., Amherst, MA
J. Macey	Astrophysics III, University College London, UK
A. MacRobert (2)	Sky & Telescope Magazine, Cambridge, MA
J. Marshall	Keele University, UK
S. Martin	Austin, TX
C. Mauche (21)	Lawrence Livermore National Laboratory, CA
A. Mazumdar	Tata Institute of Fundamental Research, Mumbai, India
N. McBurnett	Ft. Lauderdale, FL
Q. McCleery	Raleigh, NC
K. McCurdy	Milford High School, Ohio
J. McSaveny (2)	University of Canterbury, New Zealand
H. Menali (3)	Quincy, MA
A. Michelich	Morrow, OH
A. Mikishev	Ashdod, Israel
L. Minter	Charlotte, NC
D. Mo	Quincy, MA
I. Moore	San Jose, CA
L. Morales	University of Southampton, UK
L. Morales-Rueda	University of Southampton, UK
M. Netopil (2)	Institute of Astronomy, University of Vienna, Austria
D. Nikin	Chicago, IL
M. Nook	St. Cloud State University, MN
R. North (2)	University of Southampton, UK
T. O'Brien	Jodrell Bank, University of Manchester, UK
K. O'Flaherty	Maynooth, Ireland
T. Ostrowski (2)	University of Denver, CO
K. Otto	Australia
T. Ottorino	Italy
E. Pan	Albany, CA
A. Paranjpye	Inter U. Centre for Astron. and Astrophysics, Ganeshkhind, India
K. Parfrey	Dublin, Ireland
T. Park	Natick, MA
J. Pasachoff (2)	Williams College, Williamstown, MA

Table 5. Individuals requesting AAVSO data during fiscal year 1998-1999, cont.

Name	*Affiliation/Location*
E. Pat-El	Tel Aviv, Israel
L. Patureaux	Sanary, France
N. Peattie	Winters, CA
P. Pecorelli	Asociacion Argentina Amigos de la Astronomia
J. Percy	Erindale College, University of Toronto, Canada
E. Perlman	Space Telescope Science Institute, Baltimore, MD
S. Philipp	Max-Planck Institute for Radio Astronomy, Bonn, Germany
J. Phillips	Lilburn, GA
L. Pompeia	Instituto Astronomico e Geofisico, Brazil
N. Porta	Barcelona, Spain
E. Remick	Davenport, IA
A. Richards (2)	NRAL Jodrell Bank, U. Manchester, Macclesfield, Cheshire, UK
B. Robinson	Portland State University
N. Rudavsky-Brody	Worthington, OH
K. Ruminski	Nicolaus Copernicus University, Piwnice, Poland
N. Ryde	Uppsala University, Sweden
R. Sagredo	?
J. Salaz	Cuba, New Mexico
R. Salodkar	Ngpur, India
C. Sapienza	Natick, MA
E. Schalk	Uhrichsville, OH
L. Schellenberg	Switzerland
K. Schmidt	Lisle, IL
R. Schmude (2)	Barnesville, GA
B. Schwartz	Toledo, OH
A. Scott	Liverpool John Moores University, Birkenhead, UK
R. Sepic	Physics Department, Faculty of Pilosophy, Croatia
G. Seronik	Sky and Telescope, Cambridge, MA
N. Shakura	Stretberg Astronomical Institute, Moscow University
L. Shaw	Pinole, CA
R. Sides	Rosharon, TX
C. Sigismondi (2)	International Center for Relativistic Astrophysics, Italy
A. Singh	Brea, CA
P. Singh	Milpitas, CA
E. Sion (2)	Astronomy Department, Villanova University, PA
R. Slevinsky	Villanova University, PA
B. Smith (2)	University of Colorado
A. Solis	Seal Beach CA
M. Soukup	Los Alamos National Laboratory
A. Speck	University College, London
E. Staaterman (2)	Wellesley, MA
R. Staley	Orangeville, UT
R. Staubert	Institute for Astron. and Astrophysics, U. Tuebingen, Germany
D. Steeghs (2)	University of St. Andrews, Fife, Scotland
R. Stefanik	Harvard-Smithsonian Center for Astrophysics, Cambridge, MA
A. Stuver	Frostburg State University
W. Swift	University of Alabama, Huntsville
K. Tanner	Prospect Heights, IL
C. Tappert	Astronomisches Institut, Bochum, Germany
E. Teague, C. Tennant	Ithaca College, NY
I. Thomann	Zurich, Switzerland

Table 5. Individuals requesting AAVSO data during fiscal year 1998-1999, cont.

Name	*Affiliation/Location*
R. Thompson (2)	NASA/Jet Propulsion Laboratory
E. Toupin	Creston, British Columbia, Canada
C. Townes	Physics Department, University of California, Berkely, CA
D. Vakil	Caltech Astronomy Department, Pasadena, CA
E. Van Ballegoij	Oranjestad, Aruba
I. Vance	Austin, TX
F. Verbunt	Astronomical Inst. of Utrecht University, Utrecht, Netherlands
R. Viotti	Institute for Space Astrophysics C. N. R., Rome, Italy
R. Voors	University of Amsterdam, Netherlands
S. Vova	Riga, Latvia
J. Waldemer	Urbana, IL
P. Wedepohl	Somerset, South Africa
P. Wheatley	Dept. of Physics and Astronomy, U. Leicester, UK
J. White	Gloucester, MA
R. Whitson	Auburn, CA
S. Wilk	Cambridge, MA
C. Woodward	Washington, DC
J. Wouden	Yale University, New Haven, CT
P. Yadar	Kurla, Mumbai, India
J. Yi	Onsala, Sweden
M. Yushkin	Special Astrophys. Observatory, Russian Academy of Sciences
X. Zhu	Carnegie Melon University, Pittsburgh, PA