



AAVSOnet: A volunteer managed robotic telescope network

Dr. Brian Kloppenborg

Executive Director

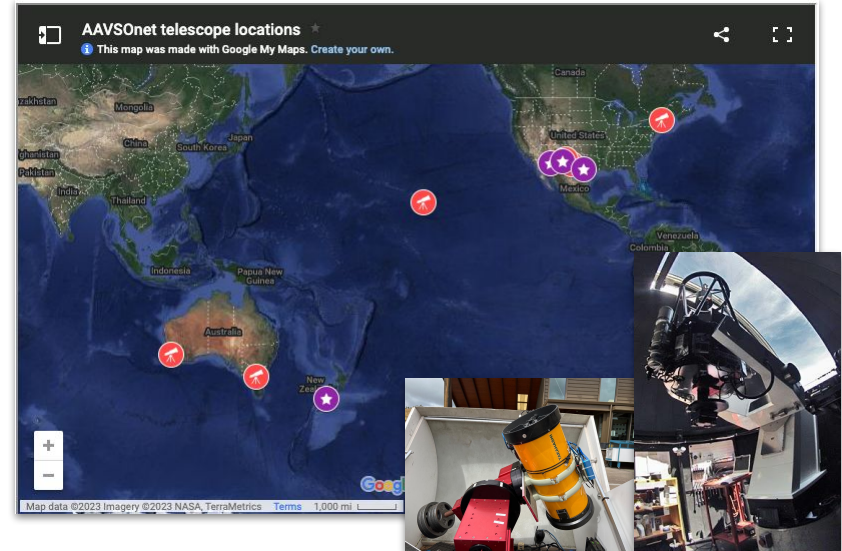
American Association of Variable Star Observers (AAVSO)

bkloppenborg@aavso.org

What is AAVSONet?

Worldwide network of small research telescopes

- 6 - Bright Star Monitors
 - 18 cm astrographs
 - Hosted at AAVSO member observatories
- 3 - Faint Star Monitors
 - 60 cm telescopes
 - Partnerships with universities
 - Hosted at
- Instruments
 - Johnson Cousins BVRI
 - Sloan rgiz' filters
 - Echelle Spectrograph
- Operational since 2006
- AAVSO member-only benefit



AAVSONet was developed with support from Diffraction Limited, DC3 Dreams, Tzec Maun Foundation, QHY, QSI, Software Bisque, and numerous individual donations



Volunteer-driven operation model

Science Advisor

- Sets long term programmatic objectives

Technical Support

- Develops and maintains technical infrastructure

Time Allocation Committee

- Reviews proposals

Scheduling

- Assigns tasking to individual telescopes

Site Operation Managers

- Open/closes dome
- Troubleshooting
- Repairs

Image Inspectors

- Reviews night results before distributing

General Support

- Other tasks as needed

AAVSOnet

Science Advisor
Arne Henden

Technical Support

George Silvis
Gary Walker
Cliff Kotnik

Scheduler

Ken Menzies

Site/Operations Managers

Helmar Adler
Greg Bolt
Walt Cooney
David Cowall
Zachary Edwards
Bill Flanagan
Bill Goff
John Gross
Arne Henden
Jon Holtzman
Peter Nelson
Bill Pellerin
Bart Staels
Preston Starr
Bill Stein
Bill Wiecking

Image Inspectors

Peter Bealo
Louis B Cox
Duane Dedrickson
Jean-Bruno Desrosiers
Robert Dudley
Damien Lemay
Dennis Means
Ken Menzies

General Support

Nigel Frost
Dick Post

The network is entirely funded and supported by volunteers

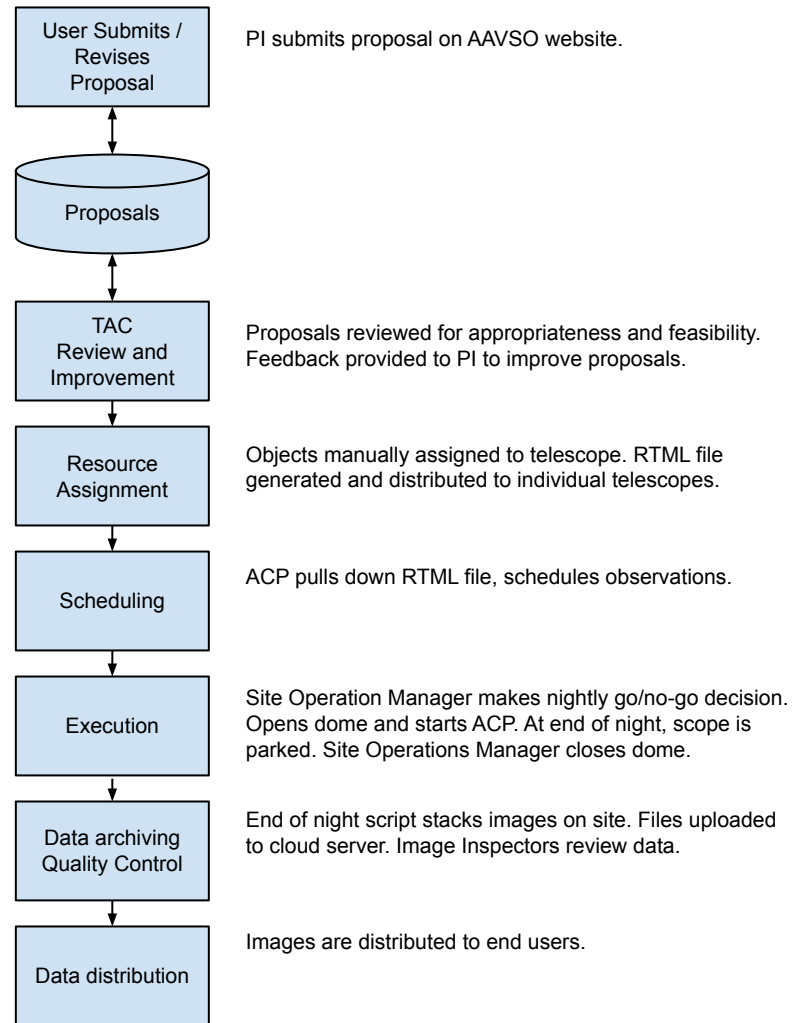


AAVSONet Process

The screenshot shows the AAVSONet Proposal Form interface. The browser address bar displays 'app.aavso.org/aavsonet/proposal/'. The page features a navigation menu with 'Proposal Form', 'Instructions', 'Proposals', 'Targets', 'Distribution', and 'Operations'. The main content area is titled 'Proposal Form' and contains a large text input field for the proposal, a table for adding targets, and a 'Submit' button. Annotations include: 'Writing tips' pointing to the top navigation; 'Existing proposals' pointing to the 'Proposals' menu item; 'Past targets' pointing to the 'Targets' menu item; 'Images being sent out' pointing to the 'Distribution' menu item; 'Recent telescope statuses' pointing to the 'Operations' menu item; a pink oval around the proposal text field with the text 'Write your proposal here'; a blue circle around the 'Add Target' button with the text 'Use this button to add more rows for targets'; and a red arrow pointing from the 'Submit' button to the target table with the text 'Enter information about your target'.

Use this button to add more rows for targets

Click "Submit" to send your proposal in for review!



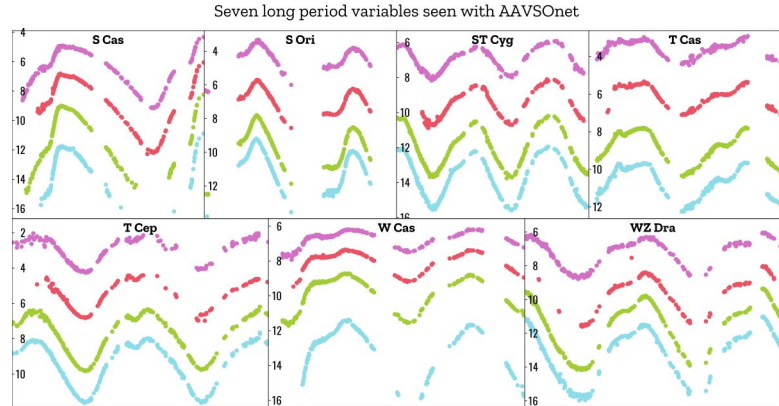
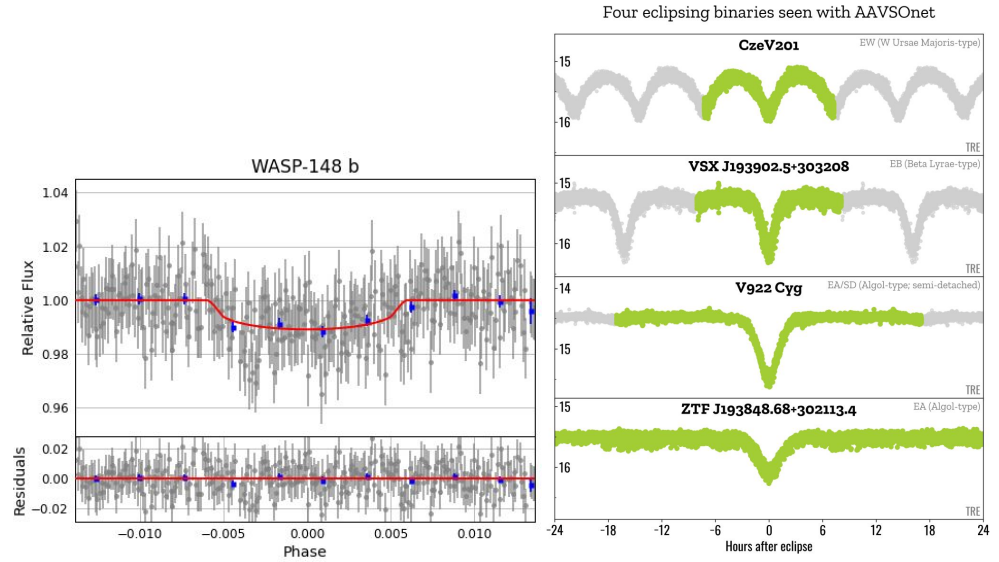
Projects on AAVSONet

Most projects are related to variable stars

- Eclipsing binaries
- Long period variables
- Novae, supernovae
- GRBs
- Exoplanets (rarely awarded time)
- Survey programs (~15% time)

Non-variable star projects

- Support for NASA DART mission



Light curves recorded by AAVSO observer Frank Schorr using AAVSONet



Opportunities for collaboration and partnership

Observation Campaigns

- Have AAVSO members collect photometry
- <https://www.aavso.org/observing-campaigns>

Partnerships with universities

- Have an unused scope? Lets us know!
- We've refurbished and upgraded scopes in exchange for time.
- 3 FSMs are set up in this model.

Data Sharing

- Stacked images are public unless explicitly requested by the PI.
- All data are reduced and submitted to AAVSO's databases within 1 year.



Capabilities, Limitations, and Gaps

Capabilities

- Coverage:
 - Hemispheres: Both
 - Longitude: 115 to 180, -155 to -180 (Americas and Pacific Region)
- Photometry
 - $6 < V < 18$
 - Johnson Cousins BVRI
 - Sloan rgiz' filters
- Spectroscopy (1 echelle unit)
 - $6 < V < 8$
 - $R \sim 10,000$

Limitations

- No dedicated funding
 - Repairs require fundraising
 - Difficult to refresh equipment.
- Backyard (BSM) scopes
 - Poor weather: 25% average availability
 - Require frequent relocation
- Volunteer management
 - Lack of corporate knowledge.

Gaps

- No support for
 - NIR Photometry or Spectroscopy
 - Speckle Interferometry
- No coverage in Europe, Africa, Asia

