

SS Cyg

Observation plan

We will trigger the outburst observation as a ToO when its visual magnitude becomes less than 10th ($m_V < 10$), by monitoring SS Cyg using AAVSO data or by monitoring SS Cyg by ourselves. The outburst observation, again as a ToO, should be started at 1-4 days after the trigger is made.

We will trigger a quiescence observation after the outburst state finishes. The outburst normally continues 10-20 days. We will declare the end of the outburst state. The quiescence observation should be started within two weeks after our declaration.

SS Cyg is not extremely intense both in outburst and quiescence. We therefore do not need any filter for Resolve. Both observations are approved with the exposure time of 100 ks for each. We need just one pointing for each observation.

Immediate objectives

- [1] Measure profiles of He-like and H-like iron emission lines to identify the location of X-ray-emitting hot plasma in outburst.
- [2] Measure profile of a 6.4 keV emission line, resolving a narrow and a broad component, to understand the geometry of the X-ray-emitting hot plasma in relation to the white dwarf and the accretion disk in outburst.
- [3] Measure profiles of He-like and H-like emission lines from oxygen to iron to elucidate radial profile of the X-ray-emitting hot plasma and to search for evidence of ionizing plasma at the entrance of the boundary layer in quiescence.
- [4] Measure profile of a 6.4 keV emission line, resolving a narrow and a double-horn component, to understand the heating process and the radial profile of the X-ray-emitting hot plasma in quiescence.
- [5] Measure gravitational redshift of the 6.4 keV emission line to evaluate the mass of the white dwarf in SS Cyg, using the data in quiescence. Outburst data may also be useful.