

Solar physics with the Virtual Solar Observatory

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The Virtual Solar Observatory (VSO) is a lightweight web service unifying twelve major solar data archives. With the VSO, users can simultaneously search for data from 50 space- and ground-based instruments covering the time period from 1915 to the present.

In addition to a web-based interface, an API allows users to directly connect other software systems, such as SolarSoft or AstroGrid, to the VSO. Results can be returned in VOTable format, allowing the use of VO technology to process VSO results.

With the availability of the VSO, solar physicists can now tackle a variety of scientific questions that were previously unfeasible. Some examples are: linking the solar wind properties to subsurface flows; detailed studies of the life cycle of active regions; development of space weather predictive techniques; the statistics of granulation over the activity cycle; and mechanisms of energy blocking by sunspots.