VOSA 7.0

A VO Spectral Energy Distribution Analyzer

New features

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VOSA (http://svo2.cab.inta-csic.es/theory/vosa/) is a public web-tool developed by the Spanish Virtual Observatory (http://svo.cab.inta-csic.es) and designed to help users to (1) build Spectral Energy Distributions (SEDs), combining private photometric measurements with data available in VO services, (2) obtain relevant properties of these objects (distance, extinction, etc) from VO catalogues, (3) analyze them comparing observed photometry with synthetic photometry from different collections of theoretical models or observational templates, using different techniques (chi-square fit, Bayesian analysis) to estimate physical parameters of the observed objects (temperature, mass, luminosity, etc), and use these results to (4) estimate masses and ages using collections of isochrones and evolutionary tracks from the VO. The results can be downloaded in different formats or sent to other VO tools using SAMP.

VOSA is in operation since 2008 (Bayo et al, 2008, A&A 492,277B), with more than 2400 active users (~8 million objects analysed), and ~200 refereed papers published making use of this tool.

We describe here the most relevant features in VOSA 7.0, whose release is expected in the coming weeks.

VOSA, VO SED analyzer

A web tool.

- http://svo2.cab.inta-csic.es/theory/vosa/

Designed to:

- Build, edit and visualize objects SEDs (User+VO data),
- Analyze them comparing observed and synthetic photometry,
- Estimate physical properties of analyzed objects,
- Work with many objects at the same time (~10000).
- Submit asynchronous, parallel jobs.

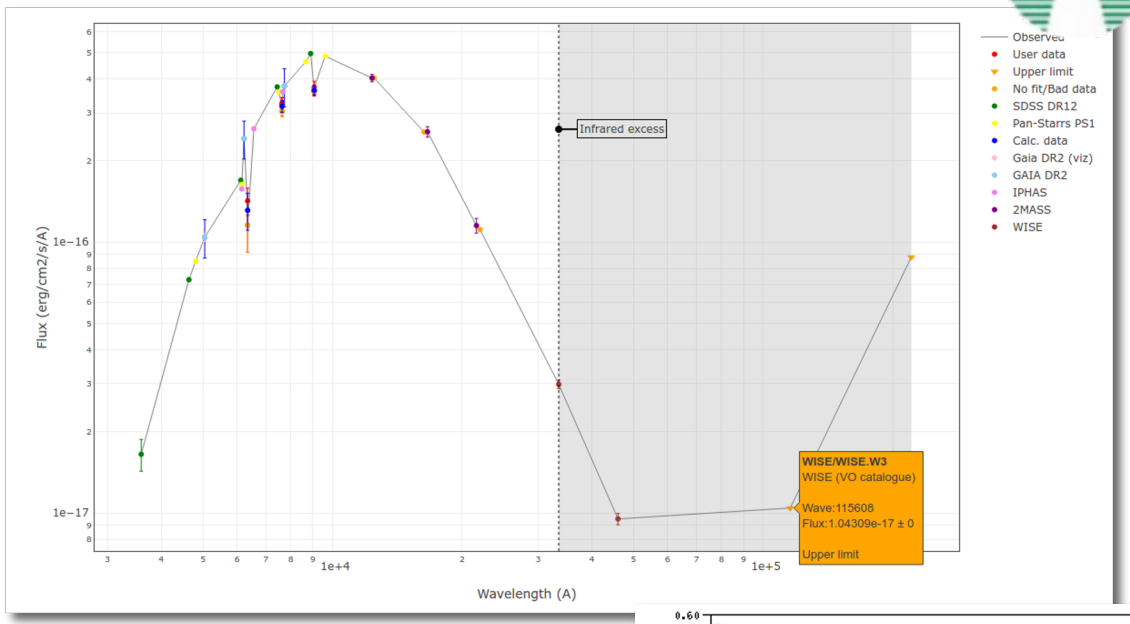
In operation since 2008 (Bayo et al, 2008, A&A 492,277B)

- More than 2400 users and more than 8 million objects analyzed.
- At least 200 refereed papers published using VOSA.

Typical VOSA workflow

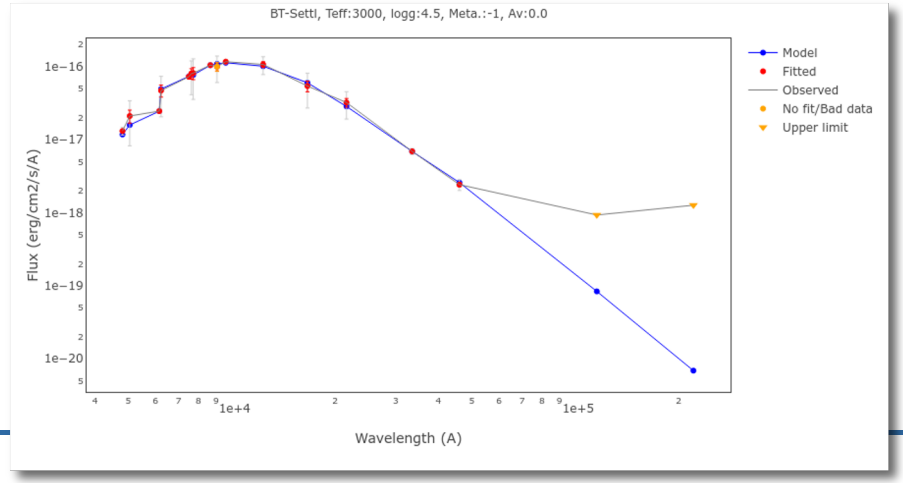
1. Build object SEDs.

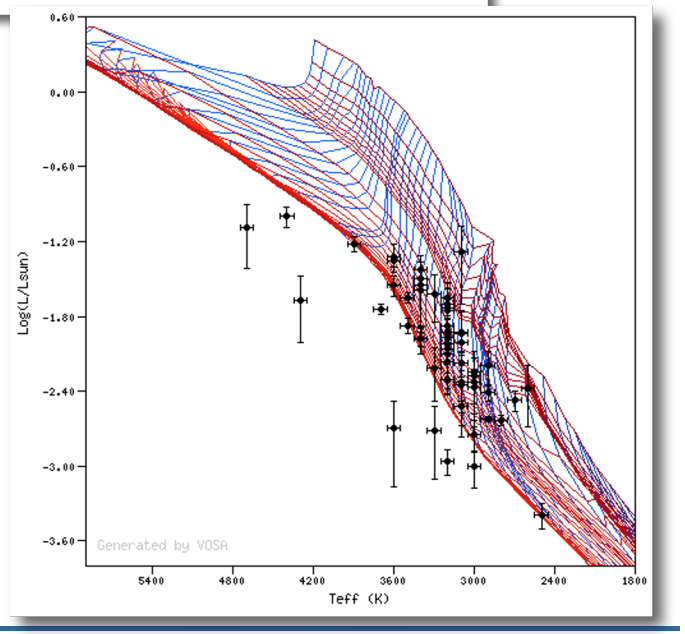
- User photometry tables + VO catalogues.
  More than 40 well characterized VO photometry catalogues.
- Search for objects properties in VO services
  (coordinates, distance, extinction)
- Automatic detection of infrared excess.
- SED visualization and edit.



2. Analyze object SEDs.

- Chi-square model/template fit, Bayes analysis, HR diagram.
- Extinction as a fit parameter.
- Using VO services: more than 40 collections of theoretical models, observational templates, isochrones, evolutionary tracks.
- Estimate physical parameters:
  Teff, logg, metallicity, age, mass, etc.



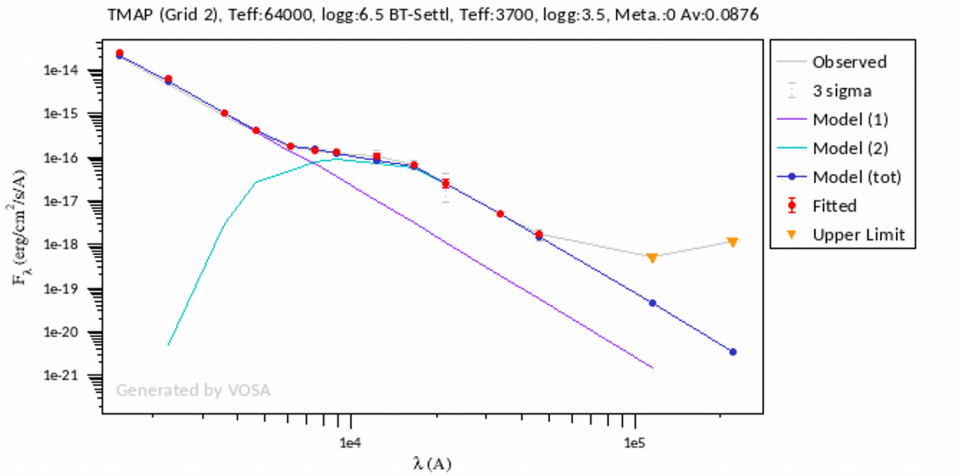


3. Save results.

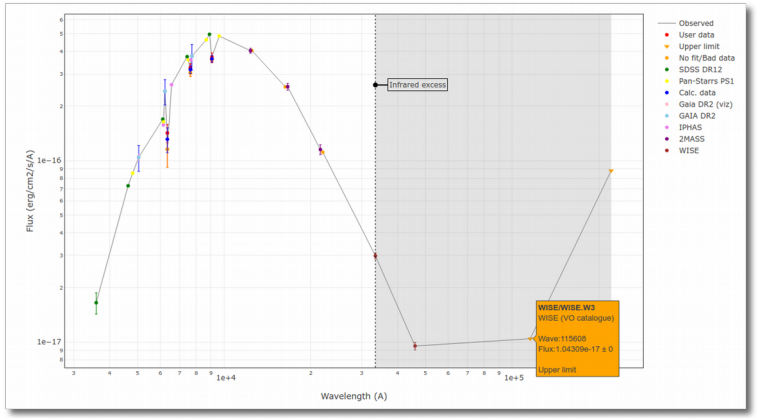
- VOTable, ASCII, png, eps…
- Send to other VO apps: SAMP

New features in version 7.

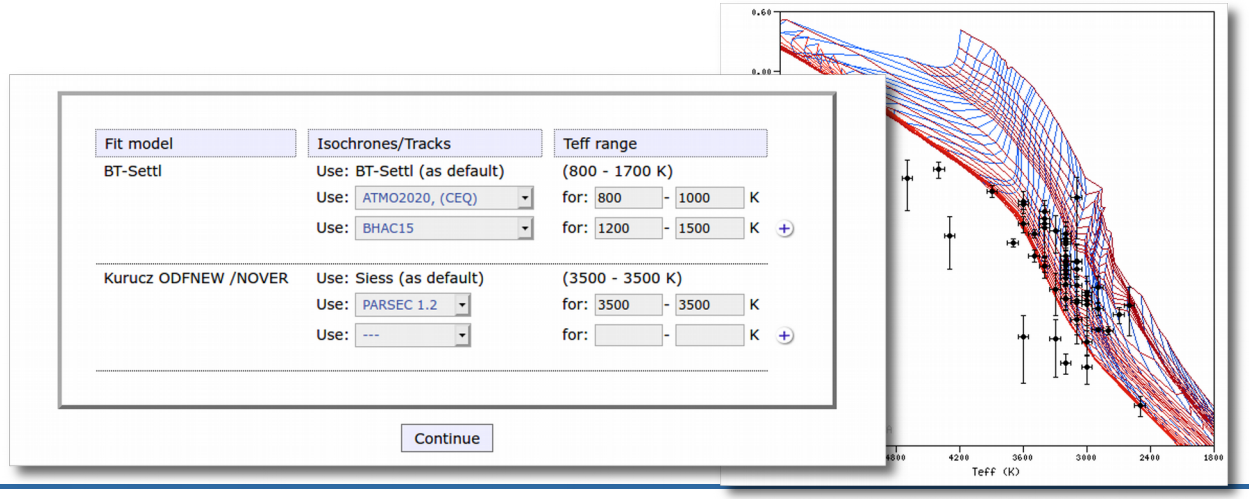
Binary object model fit.



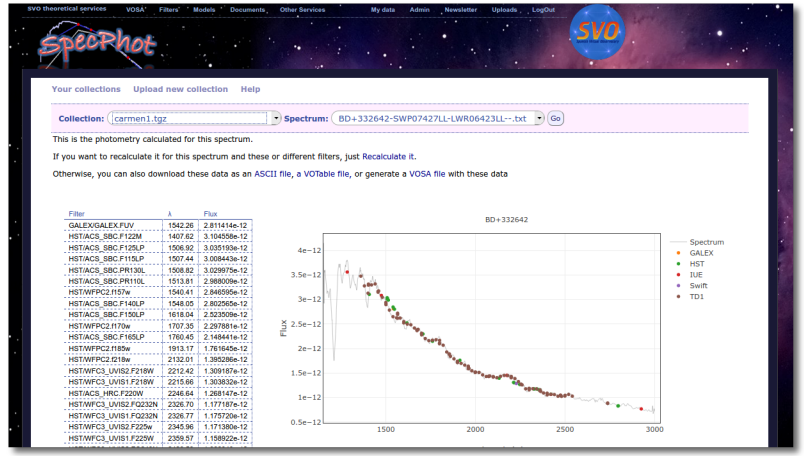
Interactive plots.



More flexibility in HR diagram analysis.



Include synthetic photometry from user spectra (with SpecPhot).



New features in version 7.

- New VO catalogs:
  - Galex GR6/7; Galex GR5/MIS
  - CMC15
  - JPLUS- DR1
  - SDSS DR12
  - PanStarrs DR2
- New theoretical models:
  - TMAP (Grid2, Grid 3)
  - Koester DA /Koester DB/DC
  - ATMO 2020 CEQ, NEQ Strong, NEQ weak
- New isochrones/evolutionary tracks:
  - ATMO 2020
  - SPOTS
  - PISA
  - Geneva
  - ...
- Other improvements:
  - Better excess management
  - Plots improvement
  - Small bugs solved
  - ...