VOV: teaching Virtual Observatory tools Virtually

Miriam Cortés Contreras Francisco Jiménez-Esteban Enrique Solano

Centro de Astrobiología (INTA-CSIC). Spanish Virtual Observatory, Madrid. Spain.



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M. Cortés-Contreras

Context: VO Schools

- The SVO group has been organizing VO schools since 2009
 - For whom?
 - New generations of astronomers to get familiar with VO tools from the early stages of their careers.
 - Amateur community, who has risen interest in the VO, giving birth to Pro-Am collaborations (p.e., REDVO project)

Context: VO Schools

- The SVO group has been organizing VO schools since 2009
 - Where?
 - Universities within their MSc program in Astrophysics but also in research centers and national meetings (both professional and amateur).
 - National VO schools: the SVO group brings the school to the research centers/institutes, maximizing attendance and minimizing costs
 - European VO schools organized within the different projects related with the Euro-VO project. A VO institution hosts the school

Context: VO schools

- The SVO group has been organizing VO schools since 2009
 - Why?
 - To teach participants on how to efficiently use the VO tools for their own research.
 - To gather feedback and requirements on VO tools and services.
 - How?
 - [°] Methodology supported on tutorials based on real science cases.
 - Hands-on experience
 - Chance for the participants to present their own science cases and develop them during the school with an assigned tutor

Context: VO schools

- > 20 schools at national and european level since 2009.
- > 500 participants







Context: problematics

- There is an increasing demand of VO workshops from the professional and amateur communities but:
 - Travelling is not always possible, even without pandemic
 - ° Finding suitable dates and times for orginizing schools becomes an issue, since amateurs have their own jobs → Weekends? Late hours?
- During the last six months, the COVID-19 disease has suddenly changed our lifestyles all around the globe:
 - **Teleworking** has become a reality for most of us
 - Schools, meetings and travels have been postponed/cancelled

Context: problematics

- There is an increasing demand of VO workshops from the professional and amateur communities but:
 - Travelling is not always possible, even without pandemic
 - Since amateurs Proposal as a first approximation solution: OUS?

remote workshops \rightarrow VOV

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VOV. Where?

- At Centro de Astrobiología (CAB, Madrid, Spain), certificated as an "Excelence María de Maeztu" center because of its impact and scientific leadership
- One of the "María de Maeztu" main goals is to boost the training activities at CAB by:
 - Disseminating science and technology
 - Facilitating transdisciplinary training
 - Promoting collaborations
 - Developing communication skills

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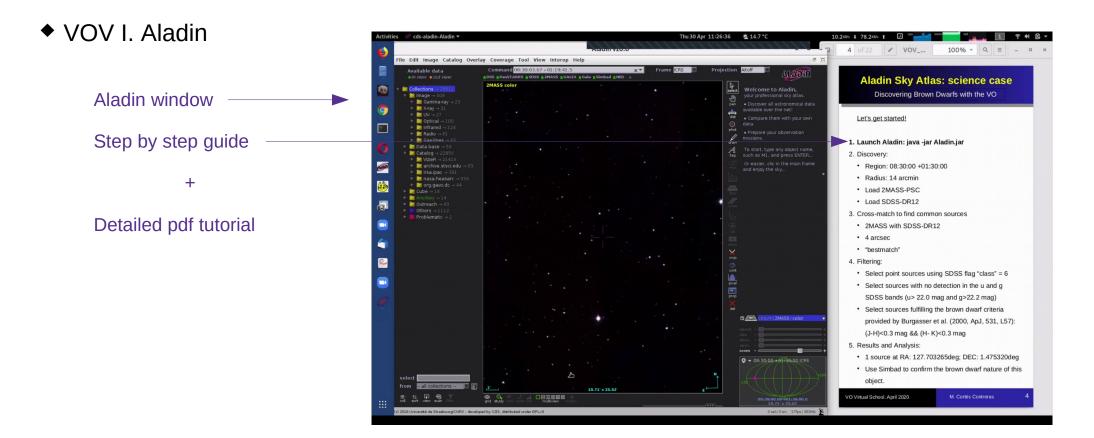
VOV. What?

- Pilot project developed taking advantage of the COVID-19 situation
- In the frame of the María de Maeztu Academy:
 - · Weekly slots of one hour for "mini workshops"
 - Thought to be presented to the whole institute (astrophysicists, engineers, chemists, biologists...)
 - · Zoom PRO account
 - In Spanish, also to reach the Latin American community
- VO tutorials based on tools instead of science cases \rightarrow one hour, one tool

VOV. How?

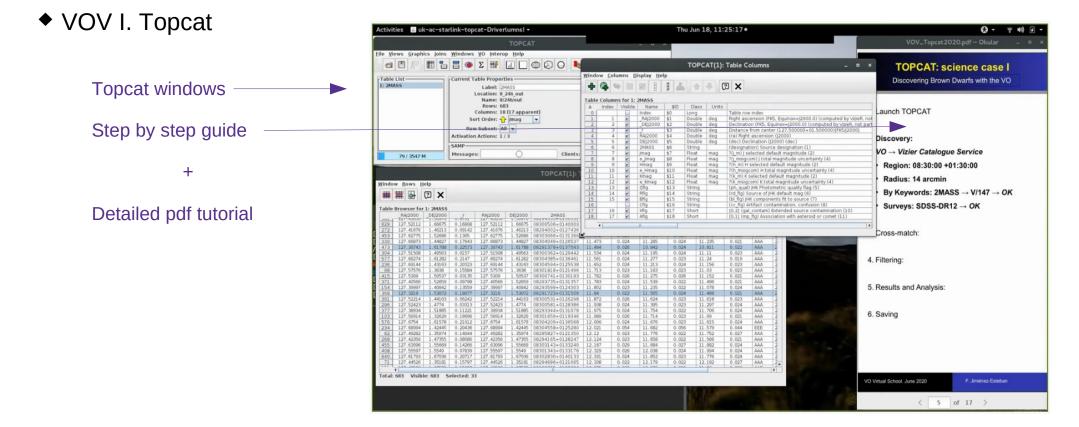
Classical VO school	VOV workshop
Duration of the school: 1-3 days	<1 day
Science case explanation	Science case explanation
	Examples to show other capabilities of the tool
Tutorial given to the participants	Tutorial given to the participants
2-3 hours/tutorial	1 hour/tutorial
Time to work on the tutorial	Tutorial conducted by the tutor
One or more VO tools per tutorial	One VO tool per tutorial
Participant's science case develop within the VO	
In site advice from the tutors	Email contact for doubts during the off-line execution of the tutorial

VOV I. Aladin



- 54 people connected permanently
- Video recorded \rightarrow available online at the SVO webpage and YouTube CAB chanel (~300 y isualizations)

VOV II. Topcat



- 62 people connected permanently
- Video recorded \rightarrow available online at the SVO webpage and YouTube CAB chanel (~100 visualizations)

Pros & Cons

- Pros:
 - Short and independent video-tutorials focused on the teaching of one tool each
 - Unlimited participants all around the world
 - Although VOV workshops could be taught as many times as needed, once recorded the **online material** (pdf tutorial and video) will always be available
 - As in regular VO schools, **several tutors** can be present to respond questions addressed via chat
- Cons:
 - Not a proper hands-on experience
 - Interaction with participants is conditioned
 - Limited time for practical questions during the session

Improvements and future work

- A VOV session could be extended, creating small working groups for a hands-on experience
- Organize and record these workshops in different languages and levels of difficulty, reaching people of different countries and general public (amateurs, teachers...)
- IVOA official videos
- Classical VO schools can be adapted to a virtual format, with perhaps shorter duration (not days) and lower costs
- Organize more complete VO schools with regular sessions in a weekly basis (for example) during months → a proper VOV course

@ObsVirtEs #SVO_VOV Online material: https://svo.cab.inta-csic.es → Education & Outreach → Schools and Meetings

Thank you.