

Different flavors of data

La Silla Paranal Users Workshop March 13th, 2018 Public



Where to find LPO data

archive.eso.org

LPO Users Workshop: Flavors of data, 13 Mar 2018, Public





The ESO Science Archive

The ESO Science Archive is the collection and distribution point of all the LPO data

- Paranal, La Silla, APEX
- All raw data (science and calibrations), selected scienceready processed data
- Raw data typically becomes available within 15 minutes from observation
 - Science data is subject to proprietary restrictions
 - Typically 1 year, with exceptions (e.g. Public Surveys)
 - Calibration data is public immediately
 - Processed data have the same rights as parent raw files





Two flavors: science and calibrations

Raw data have to be processed to:

- Extract the science signal
- Remove instrumental effects
- Remove atmospheric effects
- Calibrate in physical units
- Suitable calibrations need to be associated to the science data
 - > The calibration cascade can be rather complex
 - The ESO Science Archive does it for you

Data processing itself will be covered this afternoon



Processed data

Processed data are available for selected content

> 2.6 million files and growing...

Science-ready, they make it easier to use the data

But should be used with a grain of salt

Two flavors

- Project-oriented: processed with specific science goal(s) in mind
- Instrument-oriented: processed in a standard way to cover all the output of selected instrument modes

Processed data: project-oriented

They typically originate from large, coherent programmes: Public Surveys, Large Programmes

http://eso.org/rm/publicAccess#/dataReleases

- They typically are large, coherent datasets tailored to specific science goals
 - > The whole Southern Hemisphere (VHS)
 - > The inner part of the Milky Way (VVV)
 - The transient sky (PESSTO)
 - Multi-wave coordinated datasets (KiDS and VIKING)

Highly processed, including source catalogues



Cover the whole data history of an instrument mode www.eso.org/sci/observing/phase3/data_streams.html

Hundreds of different science cases
UVES point-source: from AGNs to local stars
HARPS: from planets to stars and beyond
PIONIER: high-spatial resolution imaging
MUSE-DEEP: deep Integral Field Spectroscopy
...

Processing level stops short of specializing the data for specific science cases



Phase 3 is the process of preparation, validation and archive ingestion of science data products

www.eso.org/sci/observing/phase3.html

Mandatory for Public Surveys and Large Programmes

> Open to all contributions

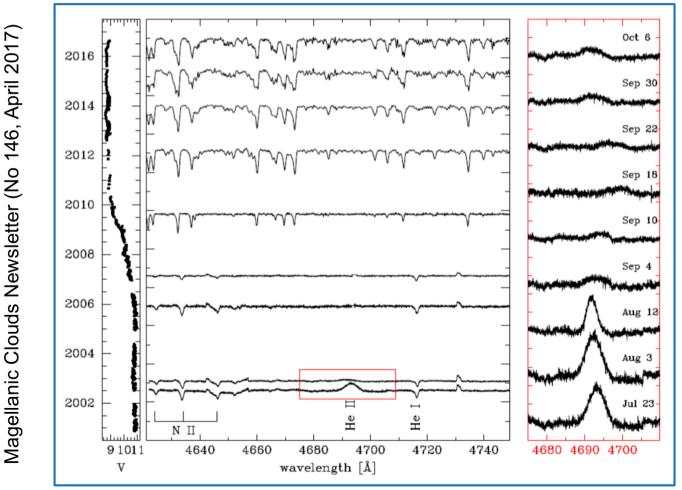
A crucial part of Phase 3 is data and metadata validation

- > Without it, the archive would just be a storage place
- > Validation turns it into a trusted source of data



A cautionary tale

With great power comes great responsibility: always triple-check the data!



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