ESCAPE

European Science Cluster of Astronomy & Particle physics ESFRI research Infrastructures

Data services at KIS SDC as a prototype for EST

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The European Solar Telescope (EST)

- ESFRI Infrastructure since 2016

- In preparatory phase

- To be built in the Canary Islands

- EST engages 23 solar institutions from 17 European countries led by Spain (IAC)

- Leibniz-Institute for Solar Physics (KIS) contributes to EST Data Centre (EST DC)
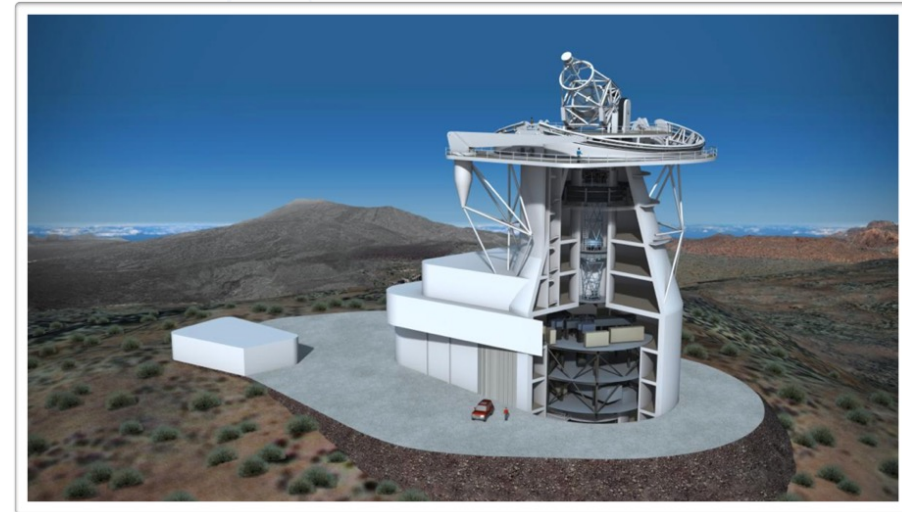
Leibniz Institute for Solar Physics (KIS)

- Observatorio del Teide, Tenerife:
  - GREGOR – 1.5m telescope
  - VTT – 70cm Vacuum Tower Telescope
  - ChroTel – 35cm Chromospheric Telescope
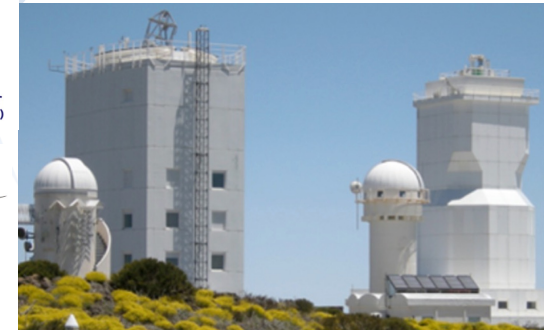
- 4m Daniel K. Inouye Telescope, DKIST (NSO, Maui)
  KIS Contribution to DKIST
 - Visible Tunable Filter (VTF)
    a spectropolarimetric imager

- 4m European Solar Telescope EST
  KIS Contribution to EST
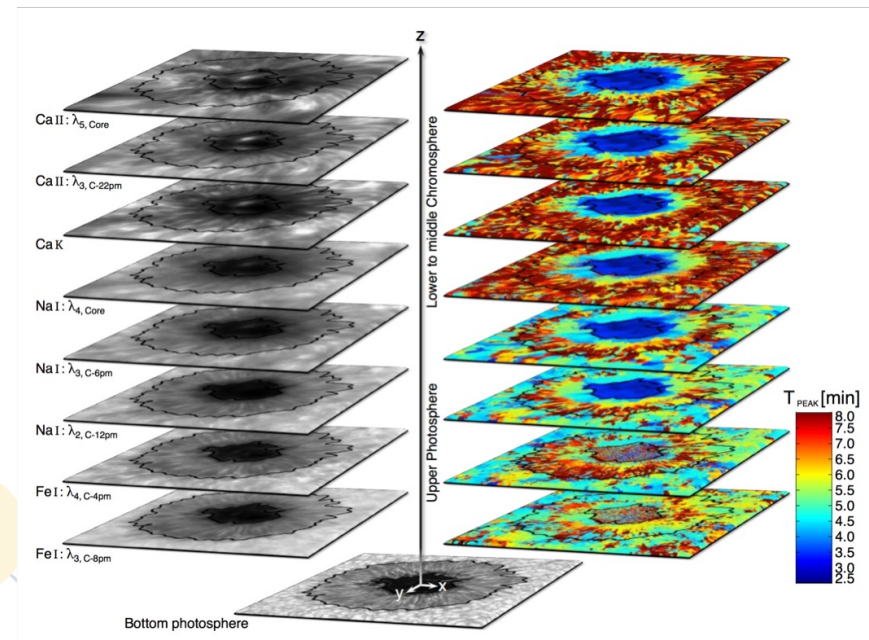 - VTF-like instrument
  - Data Centre (EST DC)

Ground-based Solar Observations

- Studying the dynamic Solar atmosphere
- Mult-instrument/multi-wavelength (explore different atmospheric layers of the Sun)
- Full-Stokes Polarimetry: I, Q, U, V
- High spatial, spectral and temporal resolution data
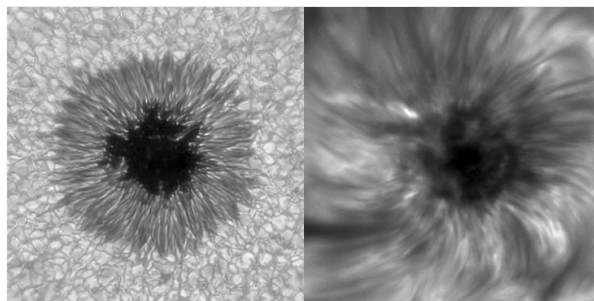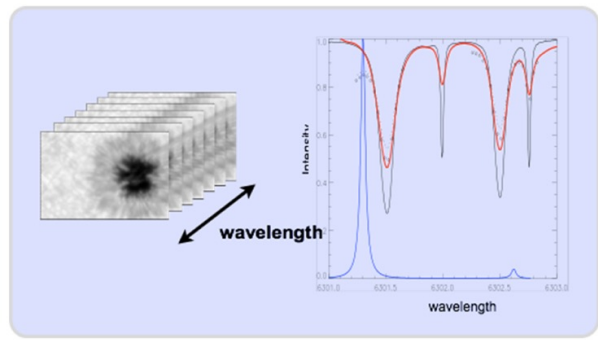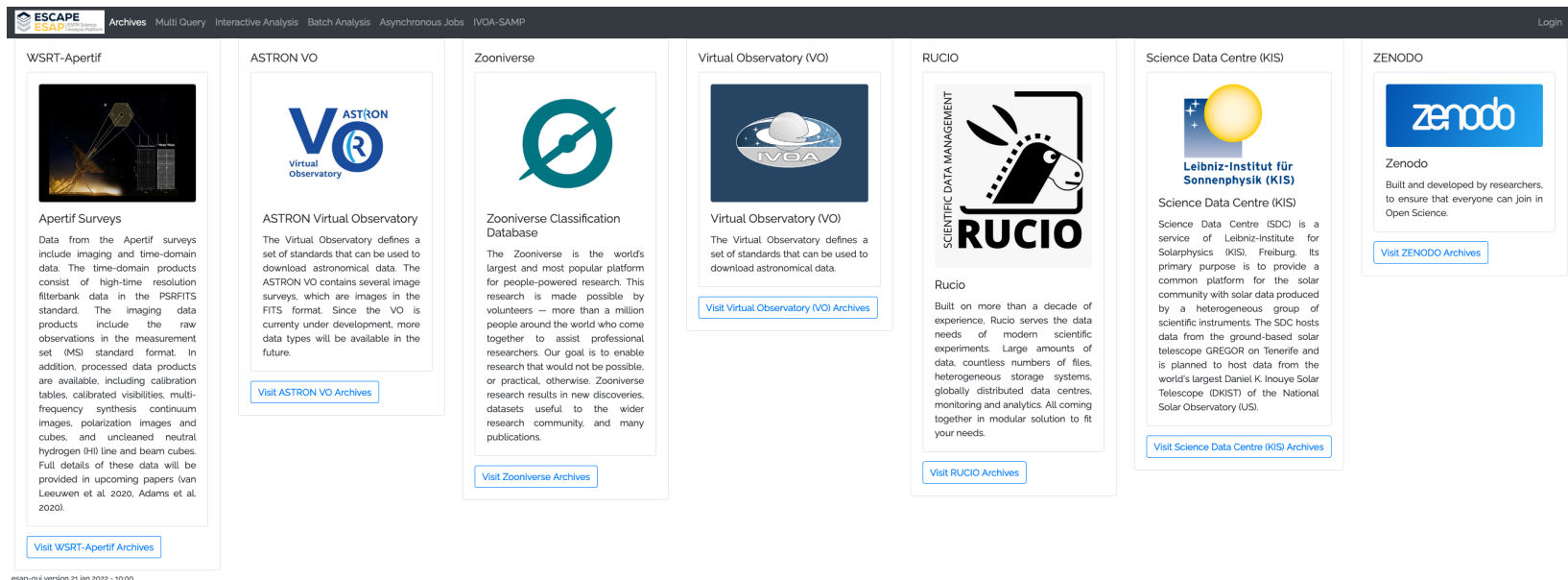
IBIS/DST & ROSA/DST data (J. Löhner-Bötcher, KIS)

Science Data Centre (KIS) in ESAP

- Dataset (2012 -): GRIS@GREGOR, LARS@VTT, ChroTel full-disk data

- Provide access to high-level solar data and tools

- Now available on ESAP (REST API access to KIS SDC)

Thanks: Klaas Kliffen, Nico Vermaas, John Swinbank and the team

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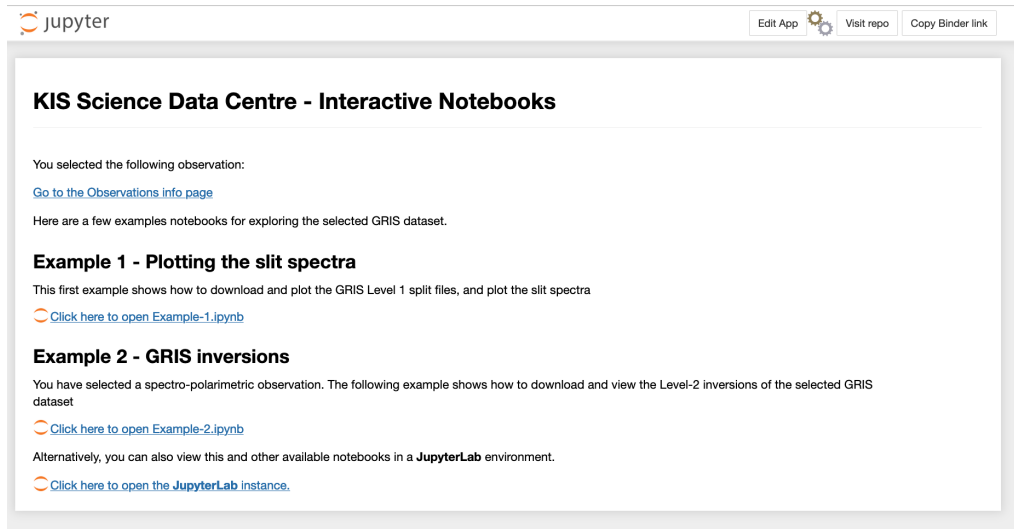Shopping basket not available, instead link to the dataset/preview/analysis

Science Data Centre (KIS) – Archive

- Calibrated data (Level 1: Spectra)

- Physical parameters (Level 2: Velocity, Magnetic field etc.) from Stokes inversions

- Preview and context information (including helioviewer)

- Interactive analysis via myBinder
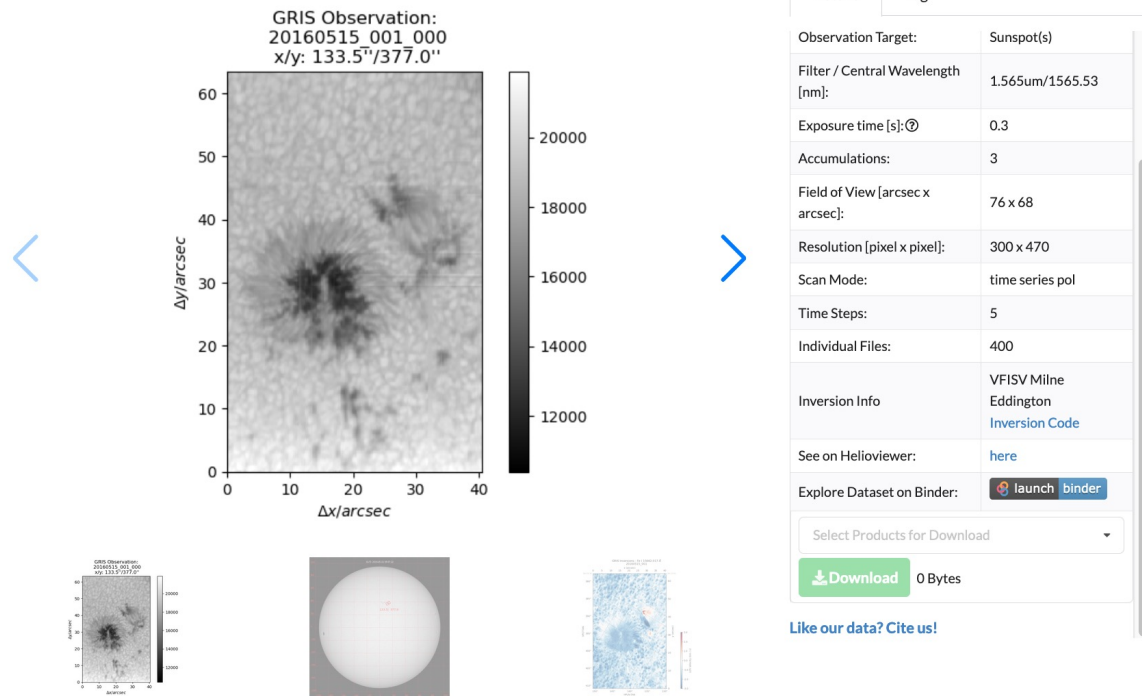
Interactive analysis

🟡 Explore individual dataset via myBinder

🟡 Start page based on data selected

🟡 Appmode, pass parameter to the repo

🟡 Autofill the notebook with appropriate data

🟡 Issues:

   🟡 L1 data (couple of GBs)

   🟡 Download speeds (6-12MB/s)

   🟡 Available memory (usually 2GB, sometimes 10GB)

Next Steps

- Migration to RUCIO
  - Testing phase (end of 2022)

- Integration: the ESCAPE Datalake
  - Issues: Authentication

- Provide compute infrastructure
  - Issues: Authentication

Thank you