HDRL
HELIOPHYSICS DIGITAL
RESOURCE LIBRARY

National Aeronautics and
Space Administration

NASA

HELIOPHYSICS
NASA

Solar Data Analysis Center and the CCMC

J. Ireland
Solar Data Analysis Center (SDAC)

SDAC and the Heliophysics Digital Resource Library

- Heliophysics Digital Resource Library (HDRL) components
  - *SDAC*
  - *Space Physics Data Facility (SPDF)*
  - *Heliophysics Data and Modeling Consortium (HDMC)*
  - *Collaboration with CCMC*

- HDRL exists to co-align efforts across NASA's heliophysics data systems to enable the scientific goals of the Heliophysics Systems Observatory under the following themes.
  - *Preserving, providing and curating data*
  - *Enhancing the discoverability of related research artifacts*
  - *Enabling further exploration of the data through the provision of computational capabilities;*
  - *The design and implementation of a collaborative open science infrastructure that supports the sharing and publication of research artifacts.*

- FAIR principles, open science requirements and HDRL vision guide future development.

SDAC Responsibilities

- The purpose of the Solar Data Analysis Center is to support the scientific analysis of solar physics data.

- Major responsibilities include
    - SOHO / LASCO Operations
    - Hosting of SOHO, STEREO, Solar Orbiter science data
    - Provision of data via the Virtual Solar Observatory (VSO)
    - "Active archive" storage of solar physics data
    - Helioviewer development
    - Support of the SolarSoft data analysis environment

SDAC – New Responsibilities via HDRL

- Offline back-up of all data held at SDAC
  - *Spectra Logic T950V tape library in procurement at GSFC*
  - *Copies will be kept at GSFC and Iron Mountain*

- Collaboration with the National Center for Climate Simulation (NCCS) at GSFC to provide substantial on-premises computational capability next to multi-PB archive of heliophysics data
  - *20PB storage in procurement, delivery in the next few months*
  - *Additional servers and faster disk for VSO support / data export*

- Collaboration with HelioCloud (AWS/SMCE/NCCS) effort to provide expertise on solar physics data, SunPy and Solarsoft/IDL data analysis environments.

Interaction with CCMC

- Existing data provision services from the SDAC will continue
    - *All data held at the SDAC is available without restriction*
    - *VSO will continue to add new datasets, capabilities*

- PUNCH and CODEX
    - *PUNCH data will be available at the SDAC*
    - *CODEX science operations and data will be hosted at the SDAC*

- Helioviewer
    - *Identified DONKI notifications (text) as a new data source for Helioviewer.*
    - *Longer term: experiments with WebGL show promise for 3-D capability but would require model output exported to a WebGL compatible format.*

End