



CHOW4DP CAESAR Hands' On Workshop for Data Providers

<https://indico.ict.inaf.it/event/2294/>

Dario Del Moro on behalf of **CAESAR Node 2000**

Project Prime:



Project Partners:





What CHOW4DP is/does

- Provide information and data sample to NODE 2000 (as it was for the ProSpecT tool)
- Help Data Providers in the description and preparation of the products to be included in the ASPIS database



Who organized CHOW4DP

- A collaborative effort by CAESAR Node2000 researchers..
- Main contributors are:
 - Marco Molinaro
 - Carmelo Magnafico
 - Valerio Formato
 - Alessandro Perfetti
- **KUDOs to them !**



Why we needed CHOW4DP

- It allows us to simplify the product "provisioning" work, putting ASPIS Developers, Data Providers and Data Users (who are often the same people) in contact
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- Meet and exchange opinions on CAESAR and ASPIS



What is next? Why are we here today?

- We will work together to:
 - Transform/Prepare the data (“CAESAR hackathon” ?)
 - Provide further -or possibly missing- metadata (Prospect on Demand)
 - Gather information on the data typical use
 - Gather information on the data typical visualization
- Then... raise your hands for questions!



END OF FILE

- CAESAR is running: good luck to all of us!







Good practices → Onboarding Rules

- Rules we all agree on?



Onboarding Rules

- Tipi di files accettati:
 - **Timeseries:** JSON, CSV, FITS, netCDF
 - **Tablesets:** JSON, CSV, FITS, netCDF
 - **Images:** FITS, netCDF
 - **Datacubes:** FITS, netCDF



Onboarding Rules

- **Contenuto minimale** dei files
 - 1 row: column names
 - 1 column: Time associated with data/event
 - X columns: Coordinates associated with data/event
 - 2 rows: Data Types + Null values
 - 1 row: Measured Quantities
 - [Data]

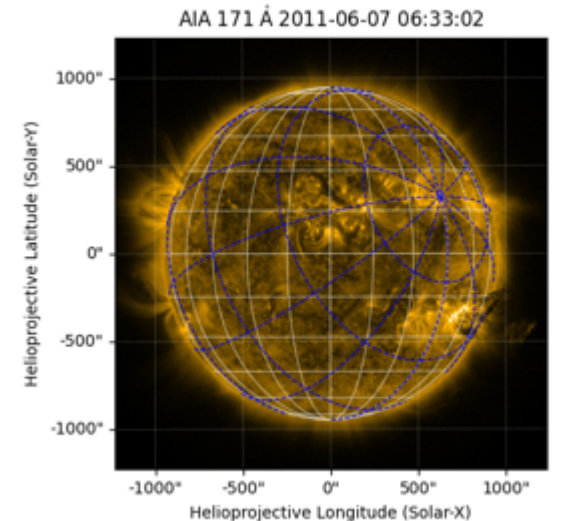


Onboarding Rules

- Quantities preferred in SI units (CGS accepted)
- Time format:
 - time scale: UTC
 - time representation: ISO 8601
- e.g.:
 - '1999-01-01T00:00:00.123456789'
 - '2010-01-01T00:00:00'

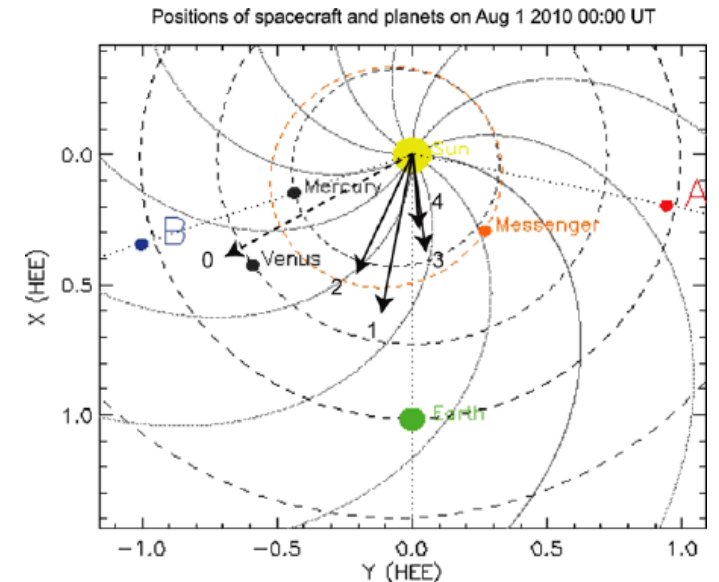
□ Onboarding Rules

- Coordinates format: those supported by Astropy, Sunpy
- HPC Heliographic Cartesian → [HPC_Tx,HPC_Ty, HPC_distance]
- HGS Heliographic Stonyhurst → [HGS_Ion,HGS_lat, HGS_z]
- HGC Heliographic Carrington → [HGC_Ion,HGC_lat, HGC_radius]



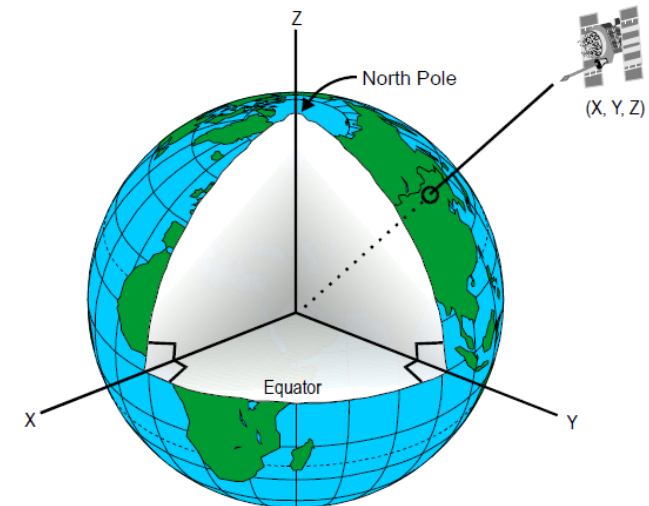
Onboarding Rules

- Coordinates format: those supported by Astropy, Sunpy
- HCC Heliocentric Cartesian → [HCC_x,HCC_y, HCC_z]
- HEE Heliocentric Earth Ecliptic → [HEE_Ion,HEE_lat, HEE_distance]
- HGS Heliographic Stonyhurst → [HGS_Ion,HGS_lat, HGS_distance]



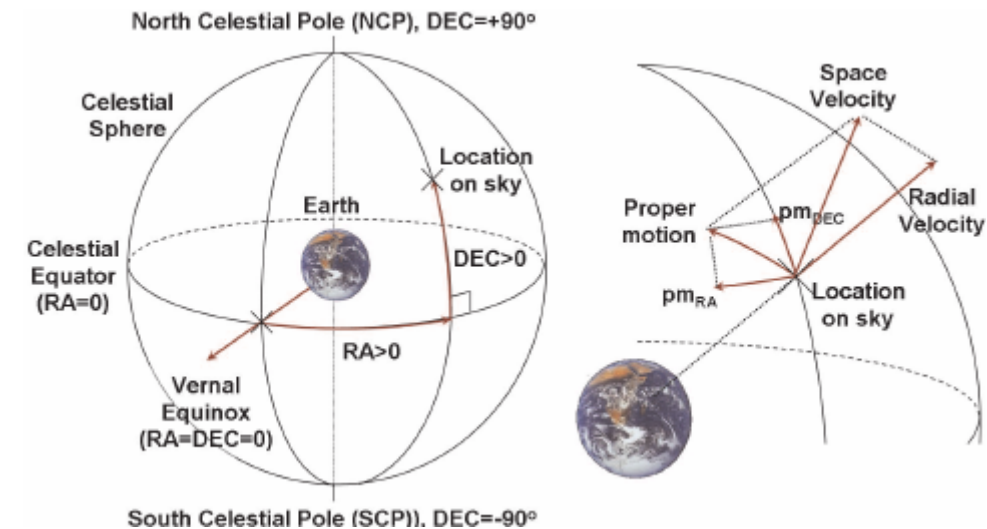
Onboarding Rules

- Coordinates format: those supported by Astropy, Sunpy
- GEI Geocentric Earth Equatorial → [GEI_Ion,GEI_lat, GEI_distance]
- GSE Geocentric Solar Ecliptic → [GSE_Ion,GSE_lat, GSE_distance]
- GSM Geocentric Solar Magnetic → [GSM_Ion,GSM_lat, GSM_distance]



Onboarding Rules

- Coordinates format: those supported by Astropy, Sunpy
- ICRS → [ICRS_RA, ICRS_DEC, ICRS_distance]
- Planetary: as Earth Coord Systems?





Data Transformation Examples:

- CAESAR NODO 2000 will provide some examples of common data transformation:
- Python sample notebooks for ASCII tabular data/time series
 - 1) Tableset: ICME da csv a csv (e VoTable)
 - 2) Timeseries: AR parameters da csv a csv (e VoTable)
 - 3) Tableset: Swarm_TEC da txt a csv (e VoTable)
 - 4) ...