



# Observation DM future developments

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# Calibration

- Scientific motivation = obvious
- Give the system for fully calibrated data
  - Spatial/Spectral/Time axis: stc coordsystem
  - Flux axis : Photometric system (ongoing effort, In SED tools such as TOPCAT, VOSPEC -> generic coordsystem from STC can be reused to defined « Johnson B » or « AB V »)
- Mapping from raw to calibrated data: is that characterisation?
  - Spatial WCS
  - Flux mapping → from counts to mag, from mag to absolute fluxes, zero points ?





# Provenance

from 2006 talk

- describe the history of the data....
- Understand where the difference between the characterization of the data is coming from.
- necessary for
  - correlation of data from various origins
  - reprocessing
  - For managing links between several stages in Observation.



# Provenance

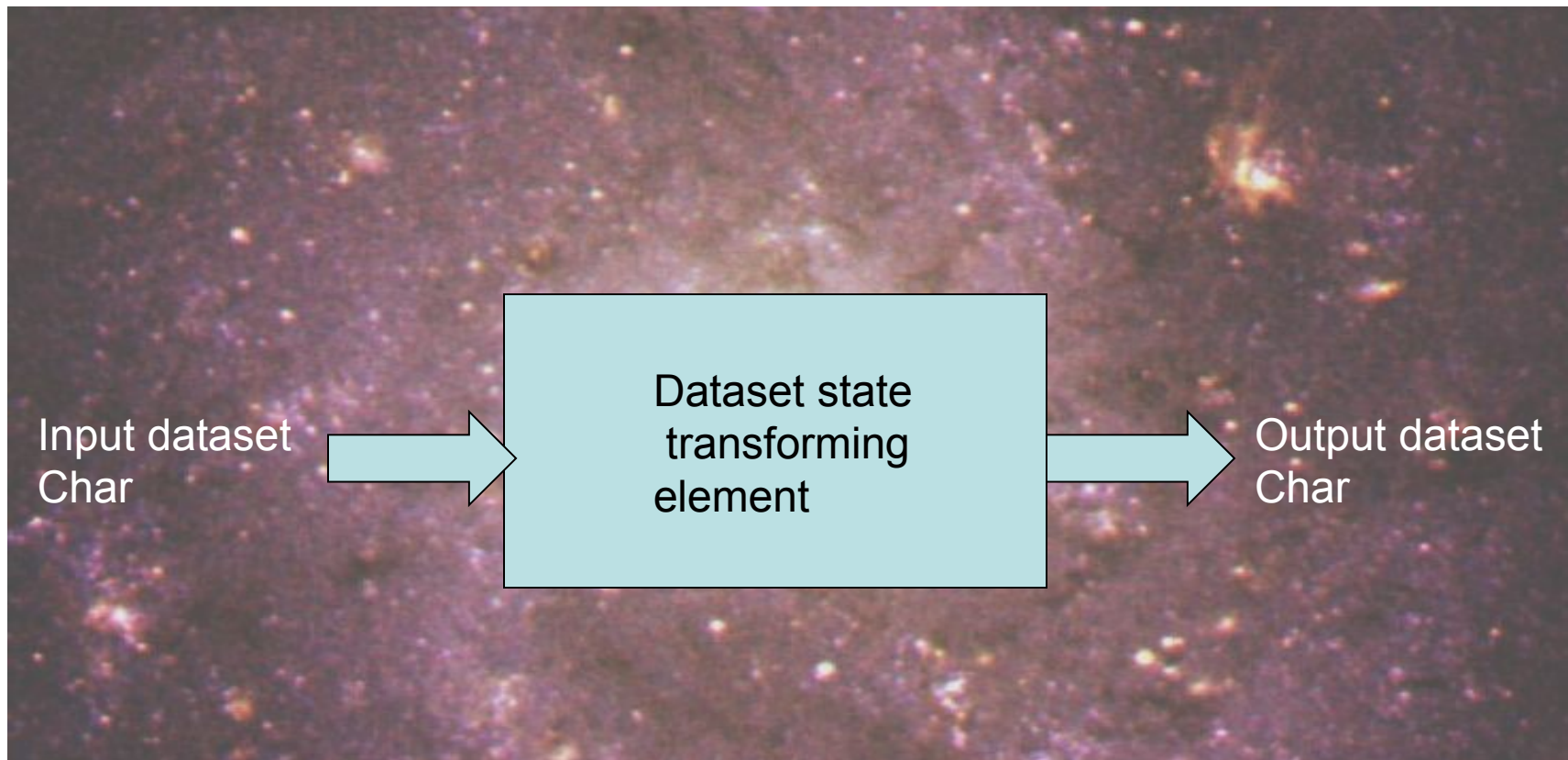
(mainly from 2006 talk)

- Observing Components and Software components
  - List them
  - Describe how they affect the characterization of the data (reuse of char in this context?)
  - Describe how they help to link break and pieces together.





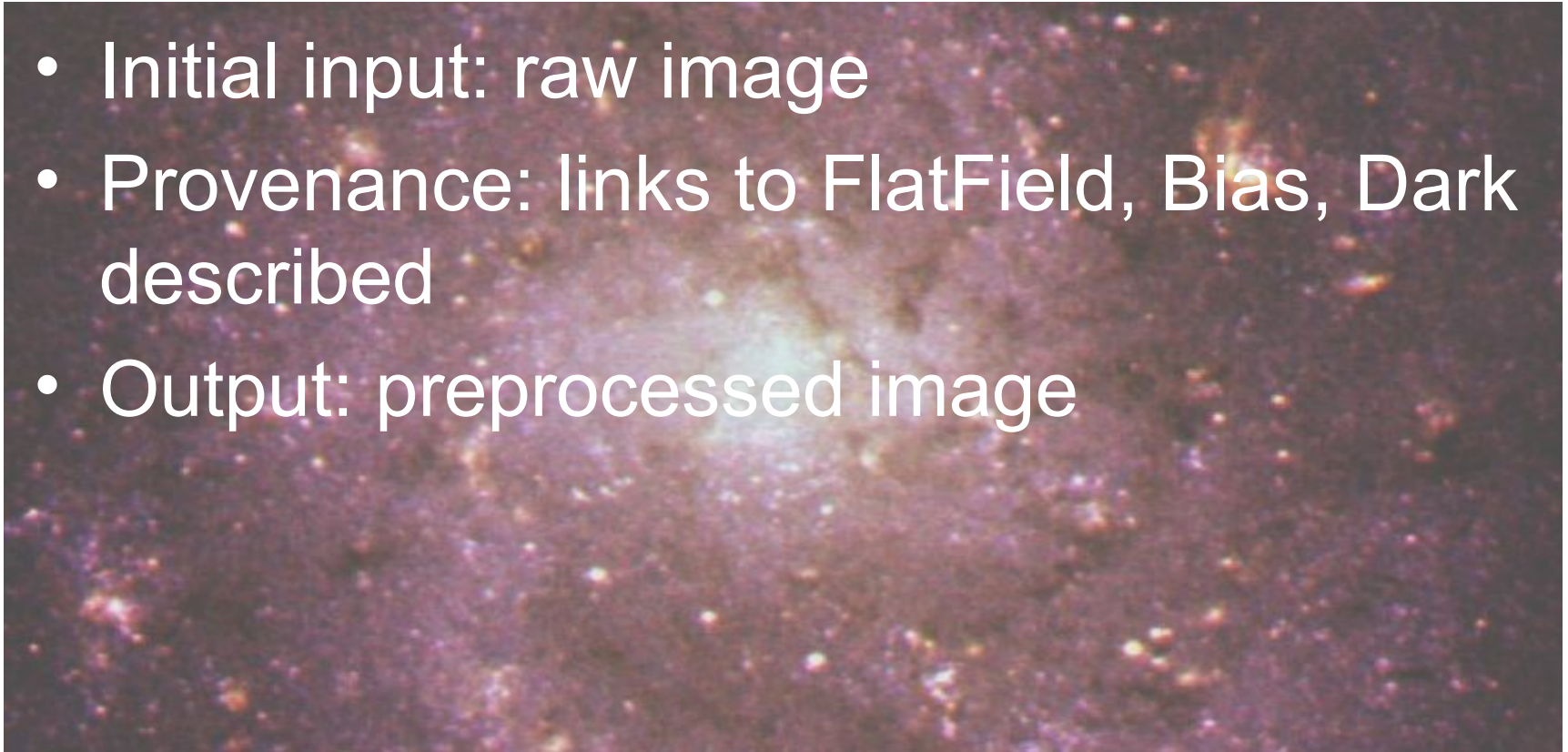
# Provenance diagram





# Provenance example

- Initial input: raw image
- Provenance: links to FlatField, Bias, Dark described
- Output: preprocessed image

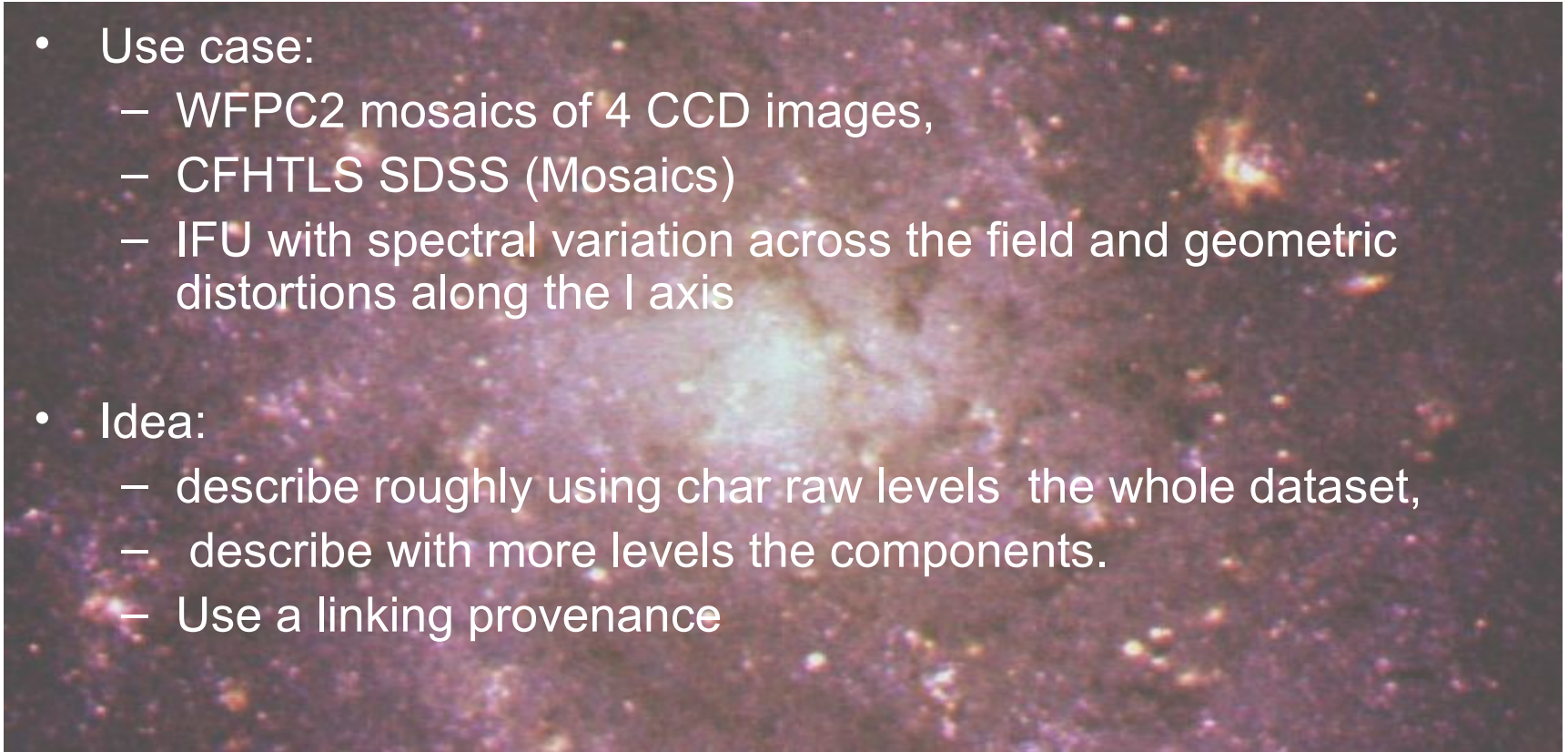






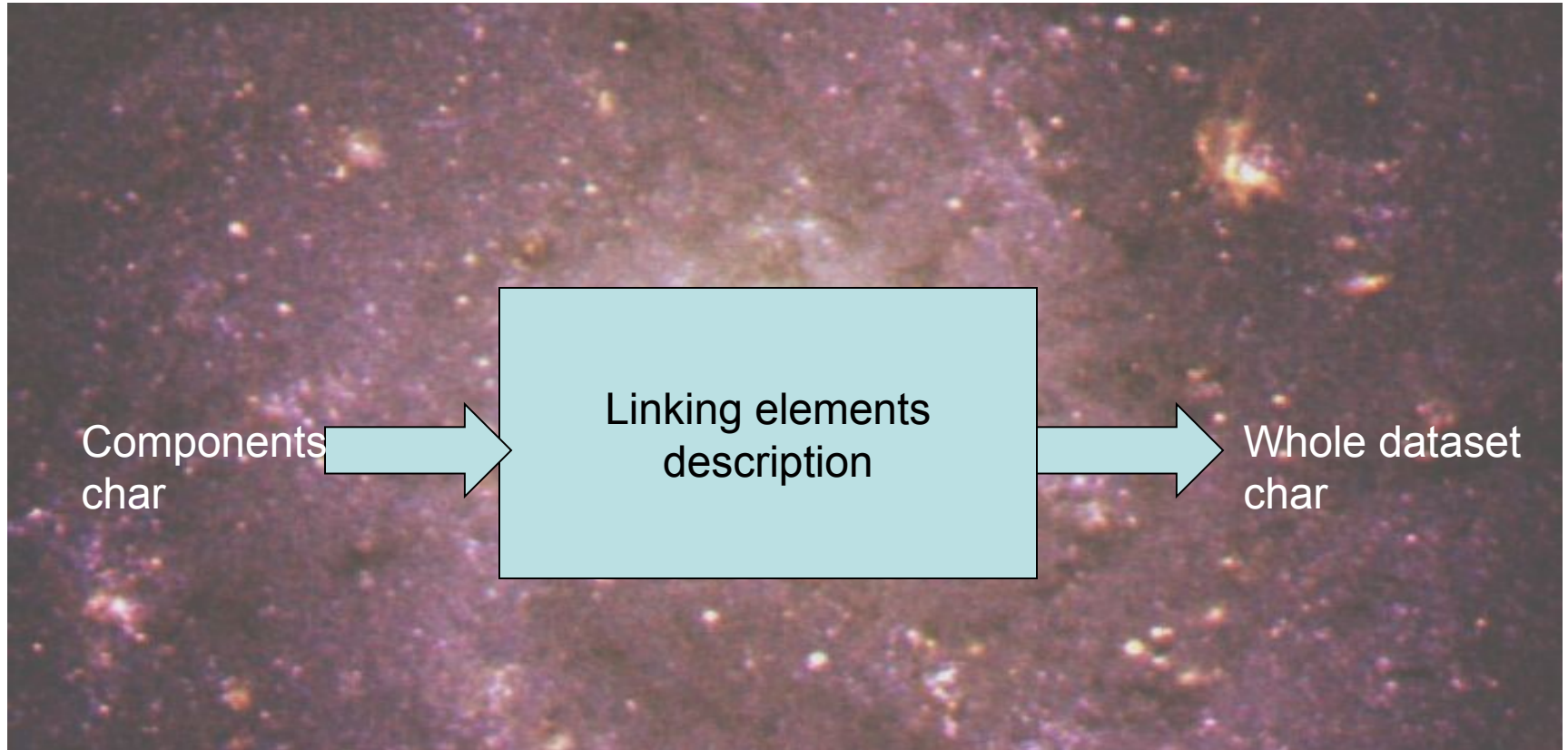
# Complex data

- Use case:
  - WFPC2 mosaics of 4 CCD images,
  - CFHTLS SDSS (Mosaics)
  - IFU with spectral variation across the field and geometric distortions along the l axis
- Idea:
  - describe roughly using char raw levels the whole dataset,
  - describe with more levels the components.
  - Use a linking provenance





# Complex data diagram







# Composed data example

- Global IFU *Bounds* and *Location* both on spatial and spectral axis
- Linkage Provenance describing the method:
  - to extract spectral characterization at a given position in the field.
  - To extract 2D characterization at a given wavelength in the band.
- Detailed characterization of spectra and 2D images extracted.



# Char level 4

- Use cases:
  - Photometric response function across the field
  - Resolution variations within the field
  - Spectral (filter) transmission of a 2D image
  - 3D aperture for spectra
  - PSF function
- Pointer to « interpretation data » and ?





# Conclusion

- Changes described here to be considered in Char version  $> 1.0$  and/or general Observation datamodel

