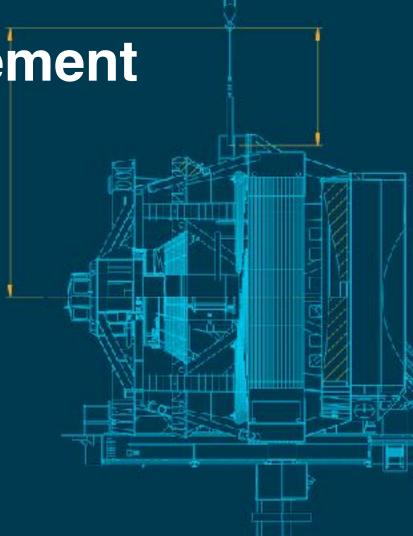
ISR in data management

Simon Krughoff – Bootcamp SLAC 2018





Instrument Signature Removal



<u>| IsrTask.run()</u>

- Per amp overscan correction
 - Overscan region fit by some function
- Crosstalk correction
 - Crosstalk coefficients
- CCD assembly
 - Camera model for translating electronic coordinates to detector coordinates
 - This trims out non-physical pixels
- Bias correction
 - Master bias frame

Instrument Signature Removal



<u>| IsrTask.run()</u>

- Linearization
 - Function to apply linearity (LUT or functional form)
- If doing brighter fatter correction do saturation and defect interpolation, otherwise wait.
- Brighter/fatter correction
 - Brighter fatter correction kernel
- Dark correction
 - Master dark frame and exposure times
- Fringe correction (can optionally be applied after flat fielding)
 - Master fringe frame

Instrument Signature Removal



<u>lsrTask.run()</u>

- Flat correction
 - Master flat
- Mask and interpolate defects and saturated columns (if not done at the same time as B/F correction)
 - Defect list
 - Threshold for saturated pixels
- Fringe correction (if delayed to after flat fielding)
 - Master fringe frame

Non-pixel level operations



<u>lsrTask.run()</u>

- Distort pure tangent plane WCS with know optical distortions
 - Distortion model attached to Camera model
- Add transmission models to the exposure
 - Transmission curves from: optics, filter, sensor, and atmosphere

What is not in ISR?



Charlmage

- Cosmic ray detection and interpolation
 - Some argue against interpolation
 - Properly flagged, it shouldn't be an issue
- Background estimation
- PSF estimation
- Detection and measurement

What is not in ISR?



<u>CalibrateTask</u>

- Astrometric model determination
- Photometric model determination