ISR in data management

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Instrument Signature Removal

IsrTask.run()

- 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
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IsrTask.run()

- 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
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**IsrTask.run()**

- 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

IsrTask.run()

- Distort pure tangent plane WCS with known 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?

CharImage

- 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?

**CalibrateTask**

- Astrometric model determination
- Photometric model determination