2012A OT Major Changes

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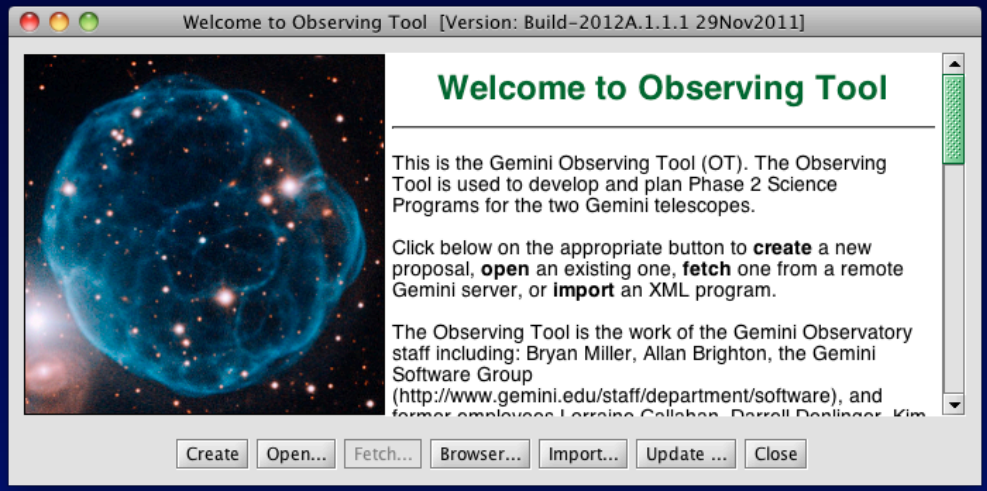
2011 December 1

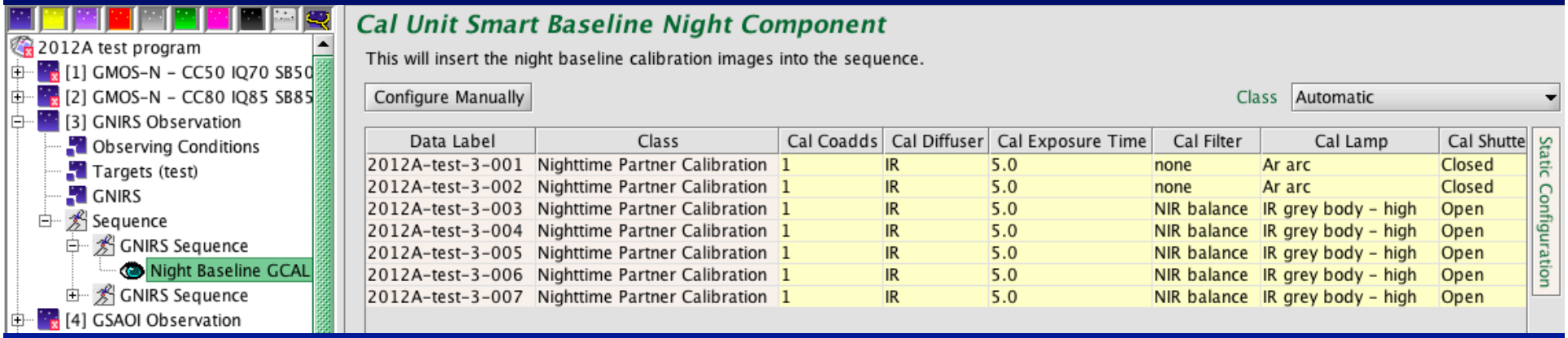


2012A OT Major Changes

- "Smart" GCAL calibration lookup
- Automatic guide star selection
  - GMOS
  - GSAOI/GeMS

Automatic GCAL settings (smartGCAL)

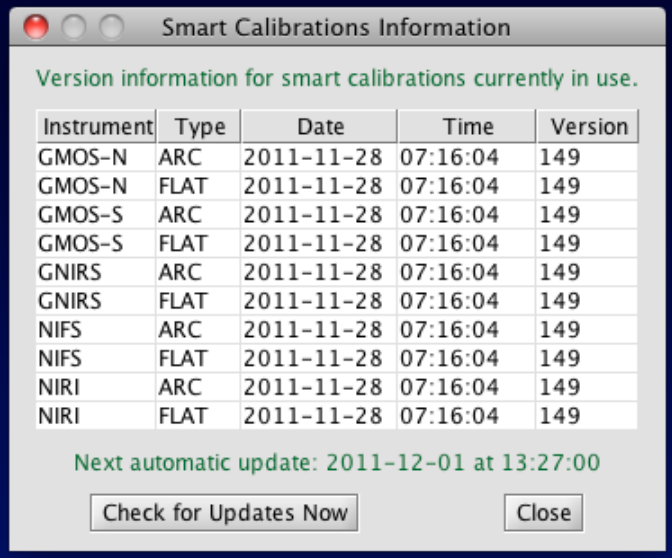
- GCAL configuration and exposure tables integrated for:
  - GMOS-N/S
  - GNIRS
  - NIFS
  - NIRI (imaging flats only)



Data Label	Class	Cal Coadds	Cal Diffuser	Cal Exposure Time	Cal Filter	Cal Lamp	Cal Shutte
2012A-test-3-001	Nighttime Partner Calibration	1	IR	5.0	none	Ar arc	Closed
2012A-test-3-002	Nighttime Partner Calibration	1	IR	5.0	none	Ar arc	Closed
2012A-test-3-003	Nighttime Partner Calibration	1	IR	5.0	NIR balance	IR grey body - high	Open
2012A-test-3-004	Nighttime Partner Calibration	1	IR	5.0	NIR balance	IR grey body - high	Open
2012A-test-3-005	Nighttime Partner Calibration	1	IR	5.0	NIR balance	IR grey body - high	Open
2012A-test-3-006	Nighttime Partner Calibration	1	IR	5.0	NIR balance	IR grey body - high	Open
2012A-test-3-007	Nighttime Partner Calibration	1	IR	5.0	NIR balance	IR grey body - high	Open

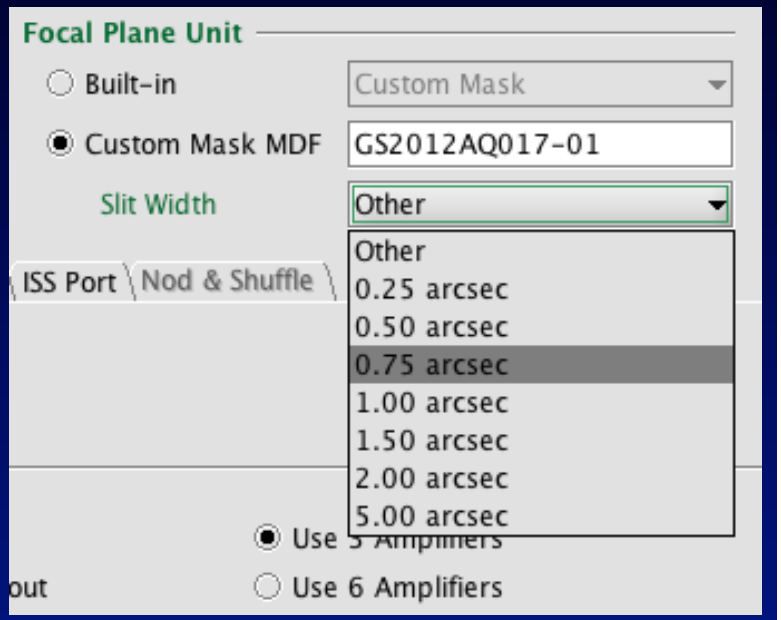
Instrument scientists maintain the GCAL tables and can update them any time.

- The OT is shipped with the latest set of tables, but automatically checks for updates once a day
- You may view version and last modified date of tables and manually check for updates
  - Help-> Smart Calibrations Info…
  - New tables will be downloaded if available



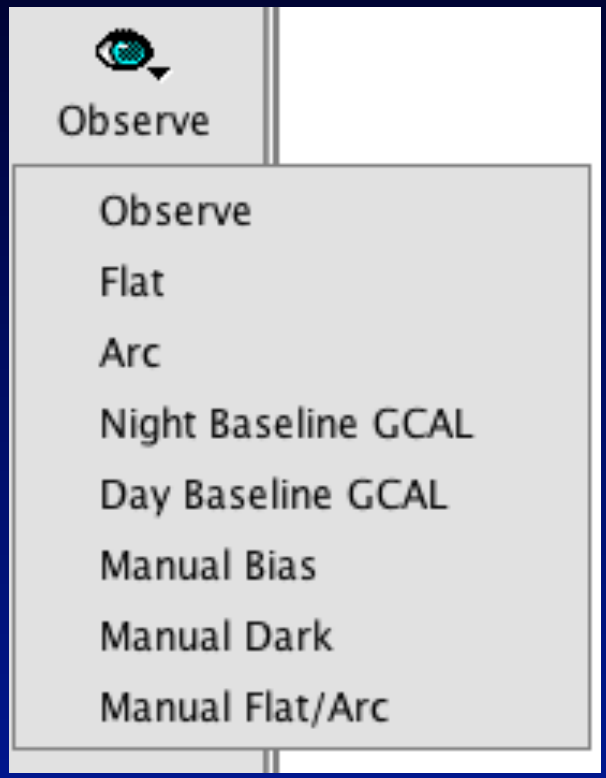
GMOS MOS slit width must be set manually for smartCALs to work

- New Slit Width menu below the Custom Mask MDF entry box in the GMOS instrument components
- Select the standard slit width closest to the widths of the slits in the mask
  - If slit size is in-between, selecting a slightly wider slit size will ensure that flats will not saturate
- We will work on having the OT read the slit width from the MDF file



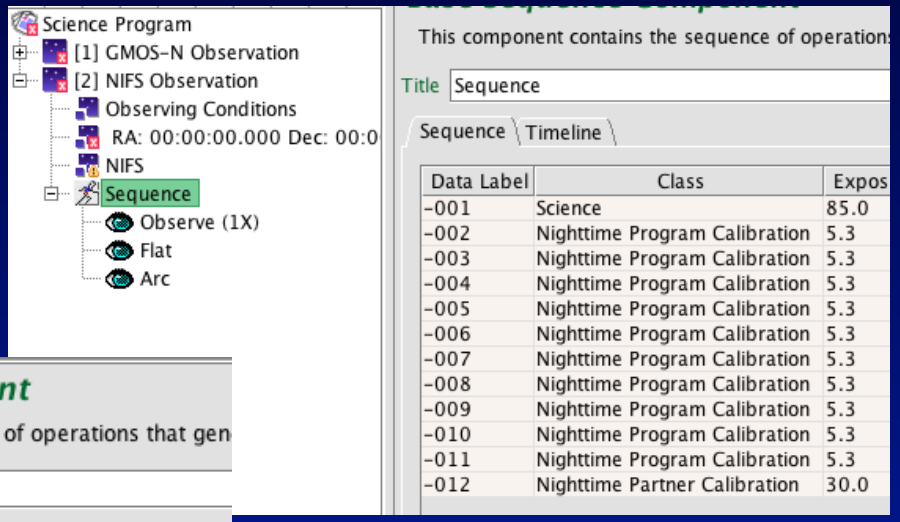
SmartGCAL Nodes

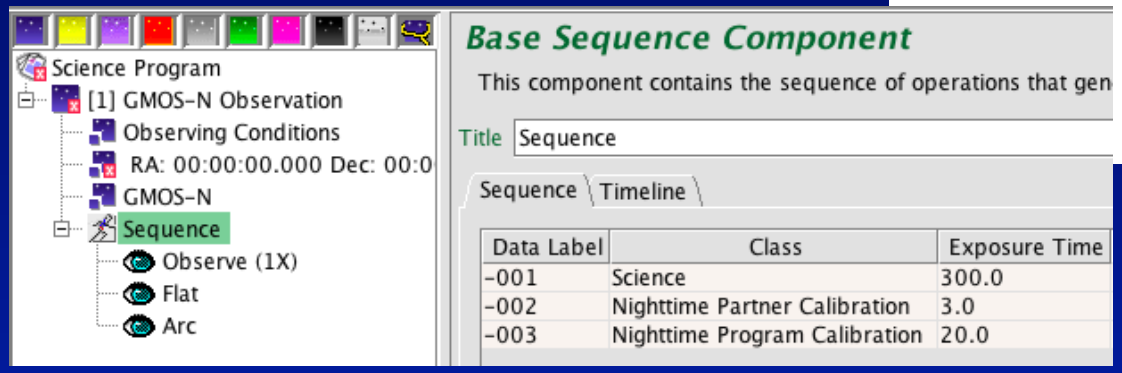
- Flat
- Arc
- Night Baseline GCAL
- Smart Day Baseline GCAL
- “Baseline” defined in configuration tables



SmartGCAL Nodes

- Flat/Arc "smart" nodes
  - Creates flat(s) for the current configuration
  - If night basecal then class=partnerCal else class=programCal
  - Class can be set manually

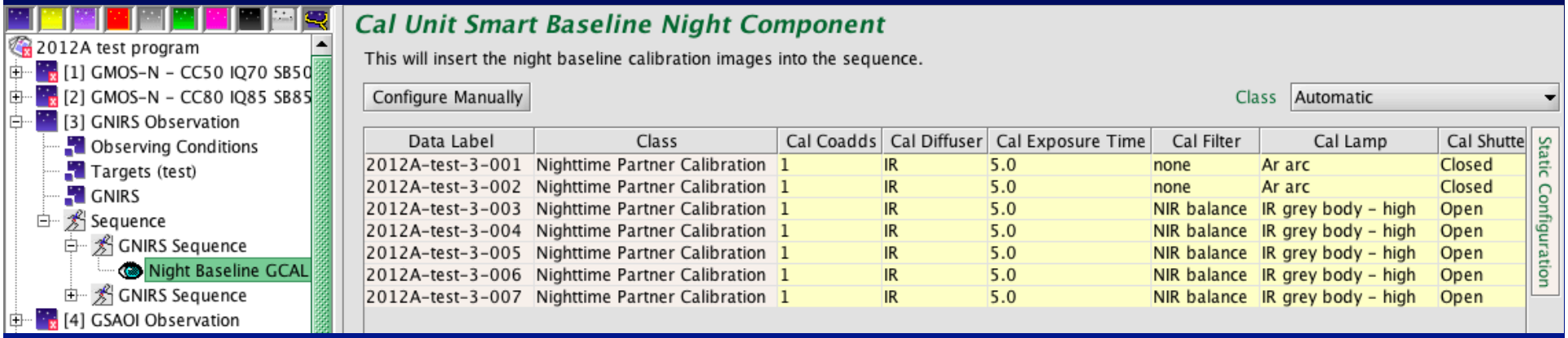




GEMINI OBSERVATORY

SmartGCAL Nodes

- Night Baseline GCAL
  - Selects/creates arcs and flat observes if night baseline calibration
  - Class=Nighttime Partner Calibration



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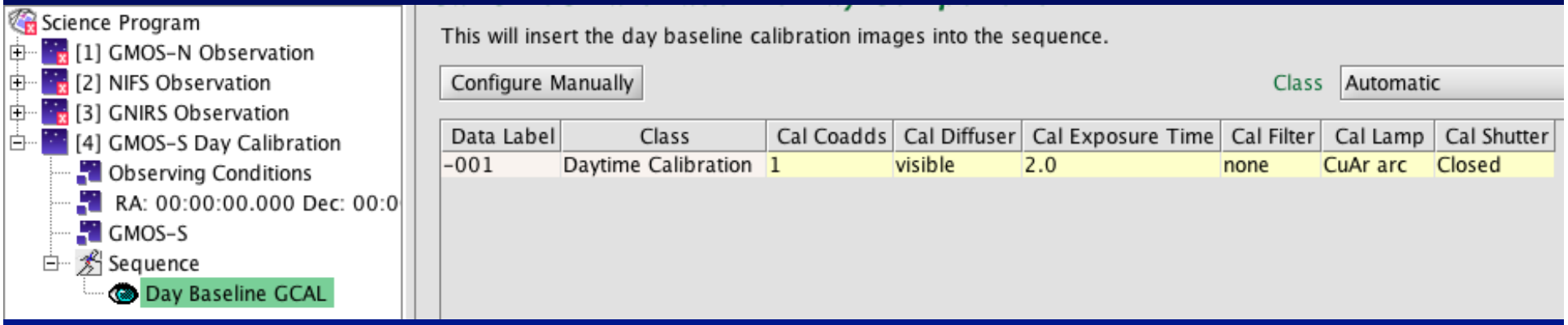
2012A-test-3-003	Nighttime Partner Calibration	1	IR	5.0	NIR balance	IR grey body - high	Open
2012A-test-3-004	Nighttime Partner Calibration	1	IR	5.0	NIR balance	IR grey body - high	Open
2012A-test-3-005	Nighttime Partner Calibration	1	IR	5.0	NIR balance	IR grey body - high	Open
2012A-test-3-006	Nighttime Partner Calibration	1	IR	5.0	NIR balance	IR grey body - high	Open
2012A-test-3-007	Nighttime Partner Calibration	1	IR	5.0	NIR balance	IR grey body - high	Open

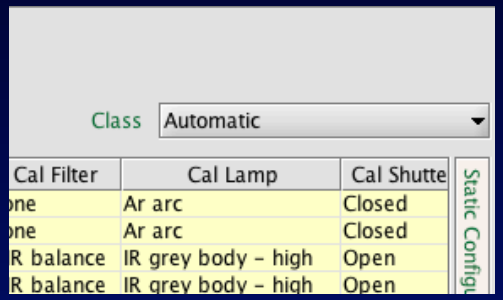
SmartGCAL Nodes

- Day Baseline GCAL
  - Selects/creates arcs and flat observes if day baseline calibration
  - Class=Daytime Calibration

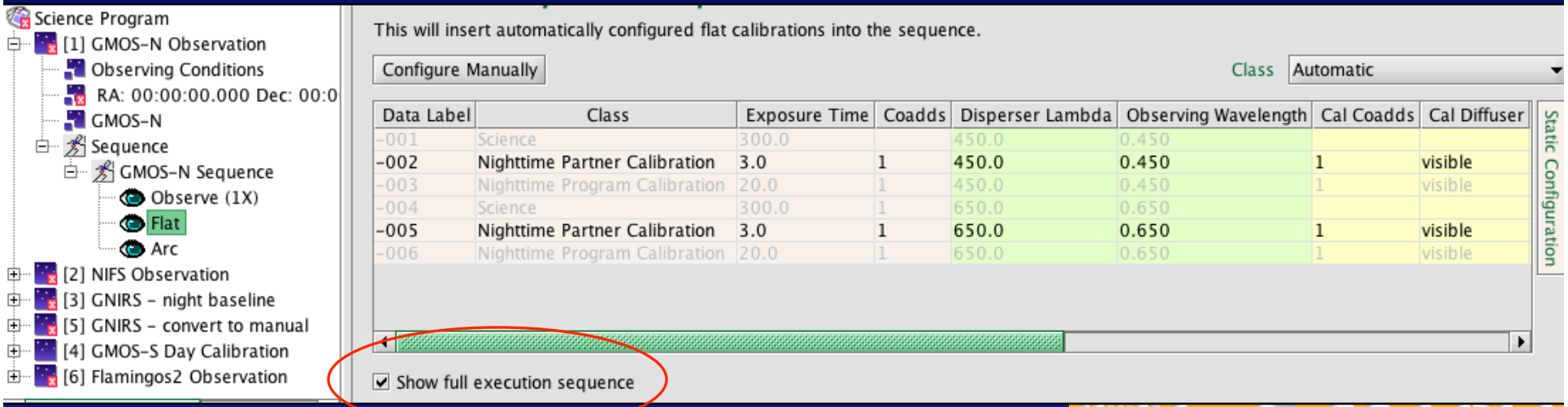


SmartGCAL – Other features

- Observation classes can be changed from the defaults using the Class menu

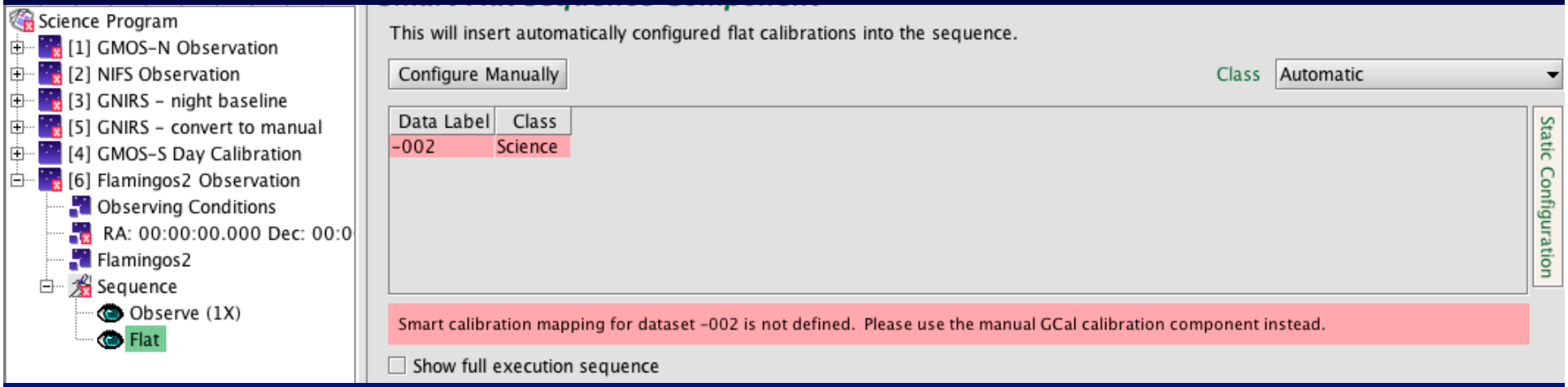


- Can see full sequence context

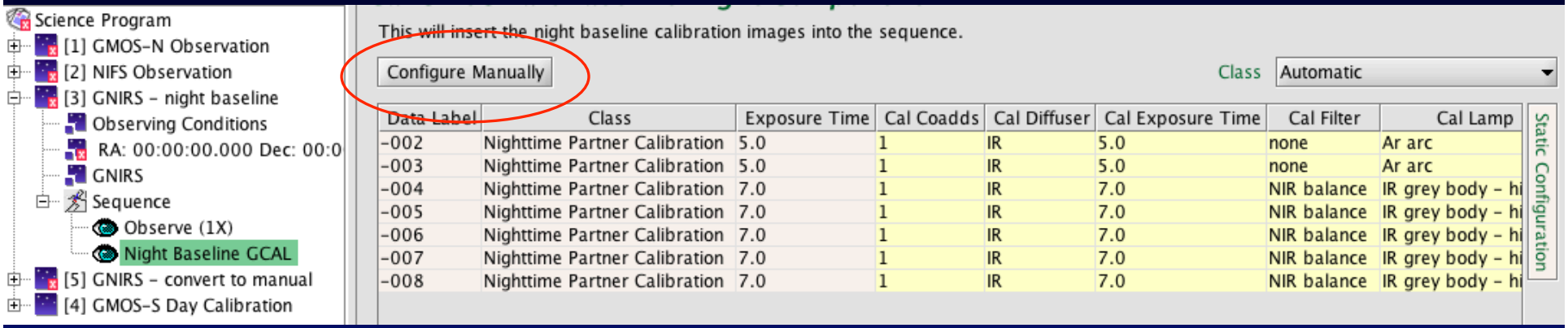


SmartGCAL – Errors

An error message appears if a configuration is not supported

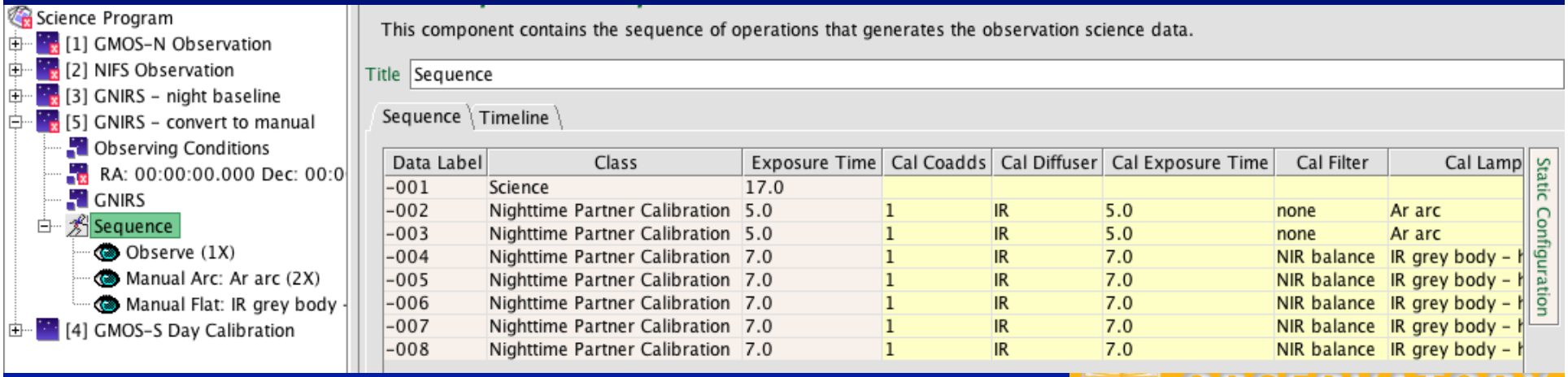


Configure manually option will convert a smart node to manual node(s)



Data Label	Class	Exposure Time	Cal Coadds	Cal Diffuser	Cal Exposure Time	Cal Filter	Cal Lamp
-002	Nighttime Partner Calibration	5.0	1	IR	5.0	none	Ar arc
-003	Nighttime Partner Calibration	5.0	1	IR	5.0	none	Ar arc
-004	Nighttime Partner Calibration	7.0	1	IR	7.0	NIR balance	IR grey body - hi
-005	Nighttime Partner Calibration	7.0	1	IR	7.0	NIR balance	IR grey body - hi
-006	Nighttime Partner Calibration	7.0	1	IR	7.0	NIR balance	IR grey body - hi
-007	Nighttime Partner Calibration	7.0	1	IR	7.0	NIR balance	IR grey body - hi
-008	Nighttime Partner Calibration	7.0	1	IR	7.0	NIR balance	IR grey body - hi

becomes



Data Label	Class	Exposure Time	Cal Coadds	Cal Diffuser	Cal Exposure Time	Cal Filter	Cal Lamp
-001	Science	17.0					
-002	Nighttime Partner Calibration	5.0	1	IR	5.0	none	Ar arc
-003	Nighttime Partner Calibration	5.0	1	IR	5.0	none	Ar arc
-004	Nighttime Partner Calibration	7.0	1	IR	7.0	NIR balance	IR grey body - h
-005	Nighttime Partner Calibration	7.0	1	IR	7.0	NIR balance	IR grey body - h
-006	Nighttime Partner Calibration	7.0	1	IR	7.0	NIR balance	IR grey body - h
-007	Nighttime Partner Calibration	7.0	1	IR	7.0	NIR balance	IR grey body - h
-008	Nighttime Partner Calibration	7.0	1	IR	7.0	NIR balance	IR grey body - h

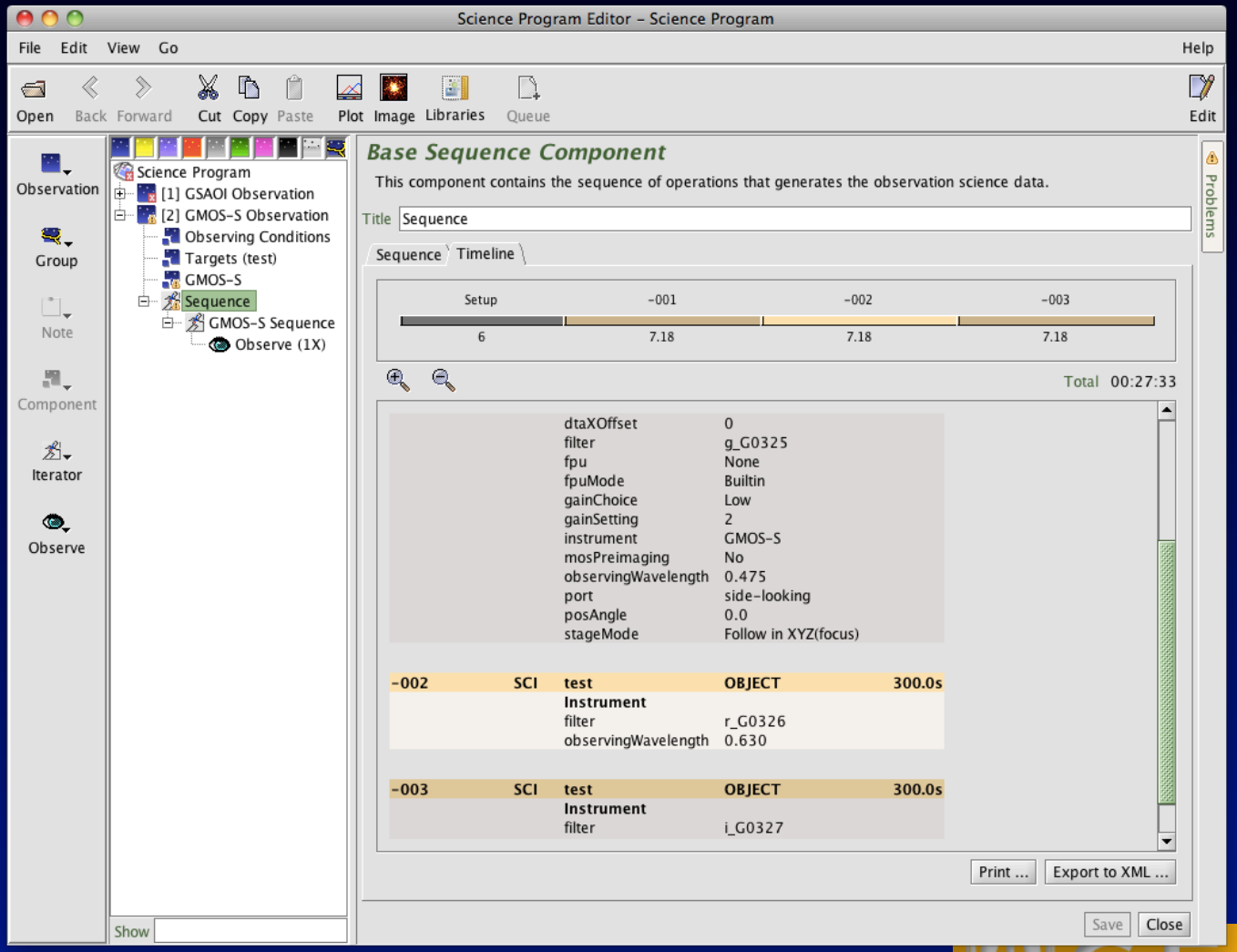
Considerations of Configure Manually

- If smart configuration undefined, default Manual Arc/ Flat node created
- Important use case is to change the number of observes
- Can be used to tweak settings, but…
  - Beware if the node is in an *iterator*, the settings of the first iterator step will be used!
  - As now, be very careful of editing configurations once the observation is Ongoing so as to not change the configurations of observed steps

Bonus features!

- Readmode for GNIRS, NIFS, NIRI set automatically for cal exposures and shown in sequence table
- Text sequence view and timeline merged
  - Planned time and timeline calculations now the same

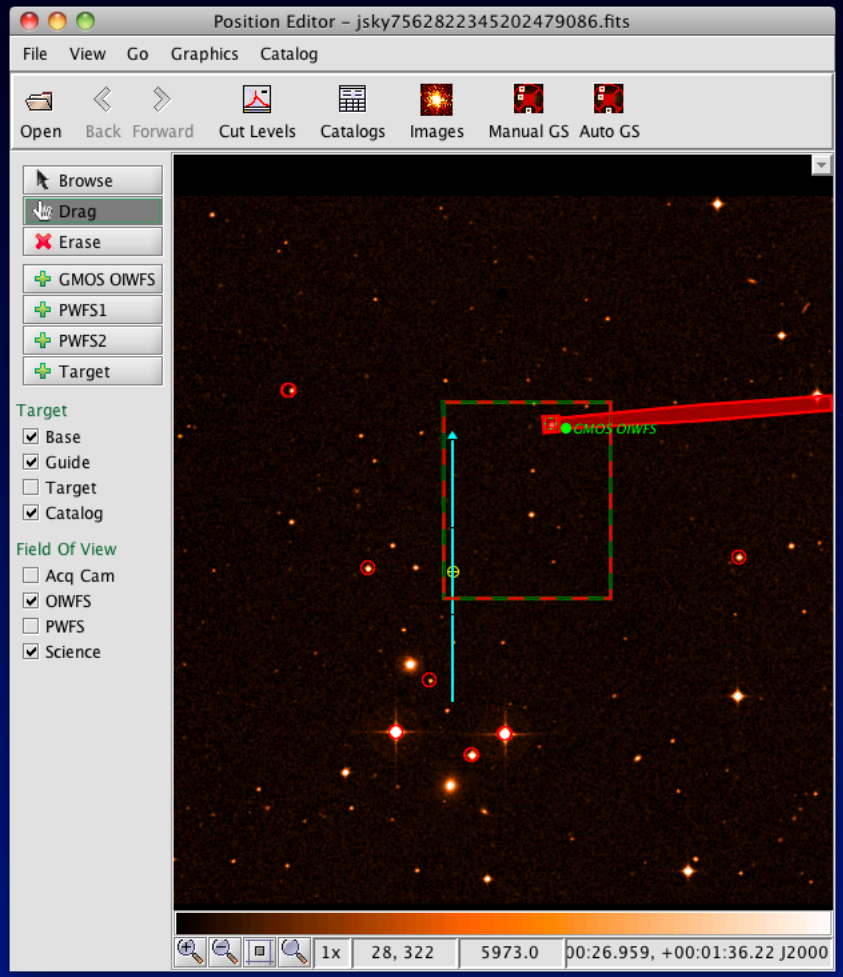
Bonus features!



GEMINI OBSERVATORY

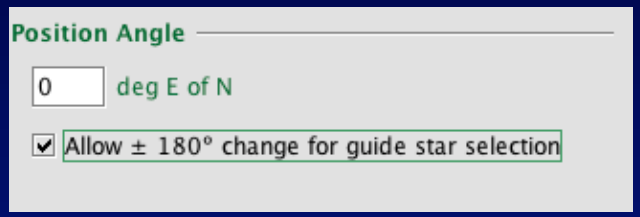
Automated guide star selection for GMOS

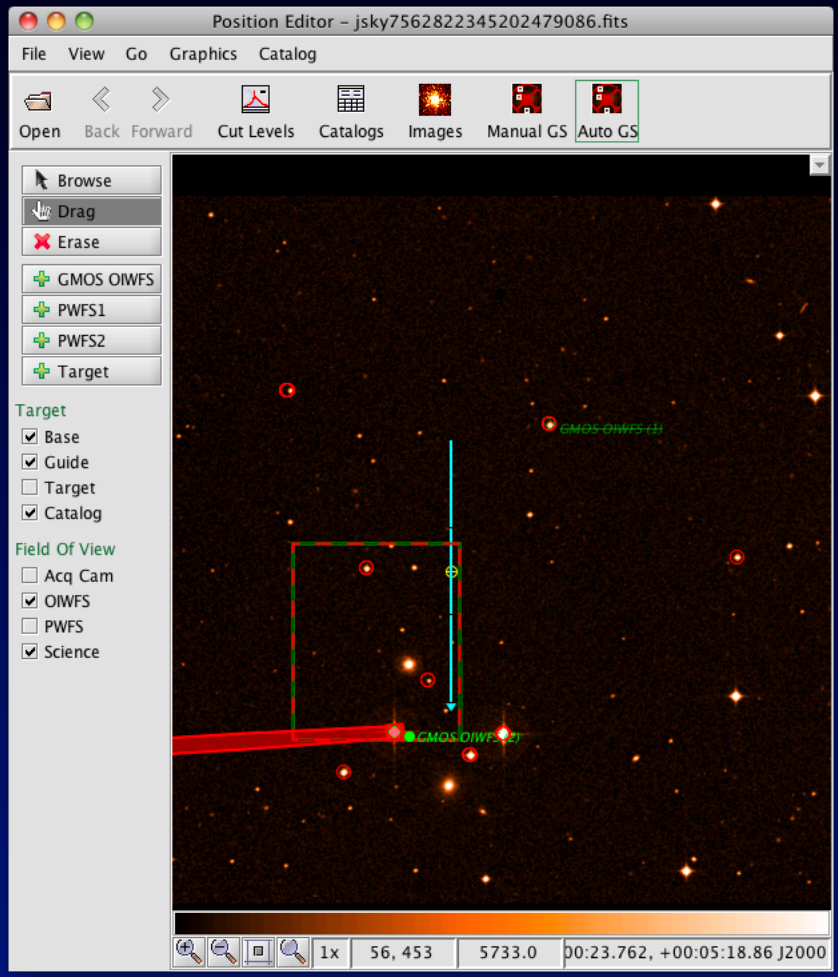
- Define target
- Set conditions
  - Limiting magnitudes depend on conditions
- Click "Auto GS" in target component or TPE
- The brightest available UCAC3 guide star is selected
- Other candidates are shown



GMOS automated guide stars – PA options

- Can allow a +/-180 degree rotation via setting in the GMOS component





GMOS automated guide star algorithm provides user feedback

- User is told if a brighter guide star is available under better conditions
- The user is informed if a brighter guide star is available at PA+/-180 and the option is not checked (can opt out of message)

Other OT changes

- Non-sidereal date calendar size and month bug
- Phase 2 checks with GMOS exposure time recommendations
- Fix GMOS gain settings in multiple sequences
- Update GNIRS read noise display
- Add initial GPI instrument component
- Email notifications will be sent when when observation status changes in SV programs