

Observing with the IIF

part I: How to get to point A.

presetTelescope

TARGET

coord1, coord2, system, equinox
pmcoord1, pmcoord2, epoch
appMag, filter, color, colorType
wavelength

OFFSET

dcoord1, dcoord2, system

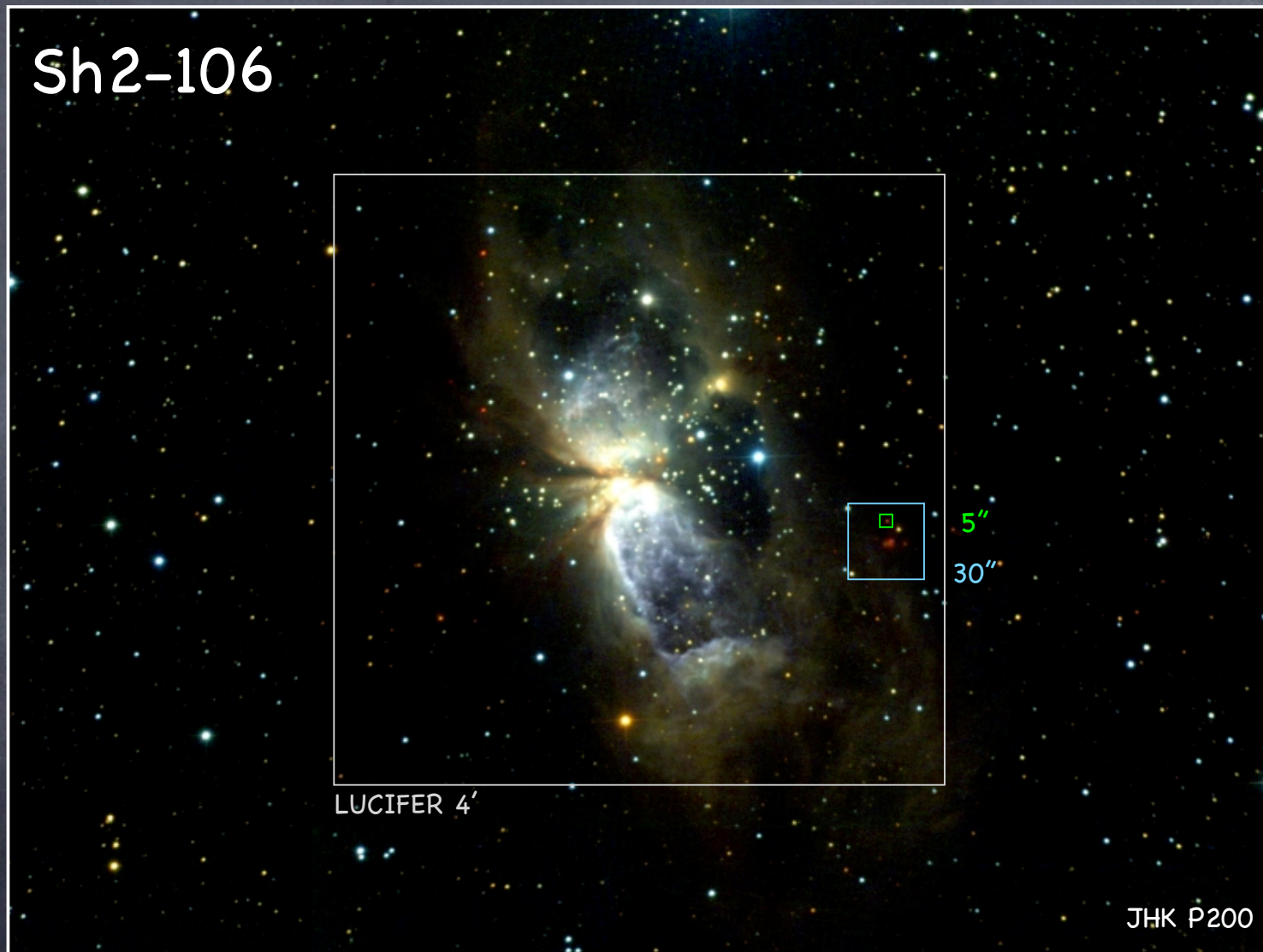
ROTANGLE, ROTMODE

HOTSPOT

coord1, coord2

TARGET

Sh2-106



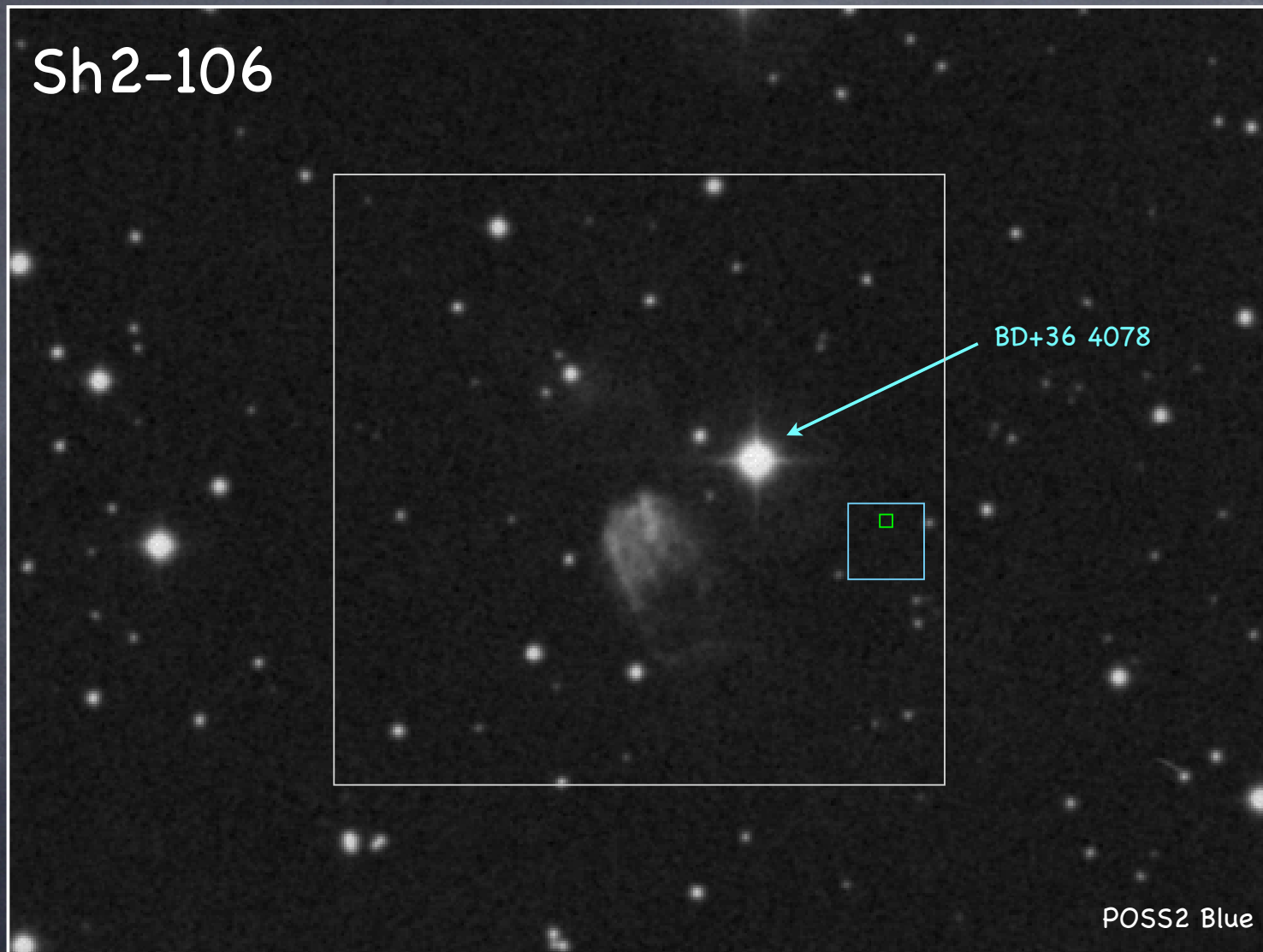
LUCIFER 4'

5"
30"

JHK P200

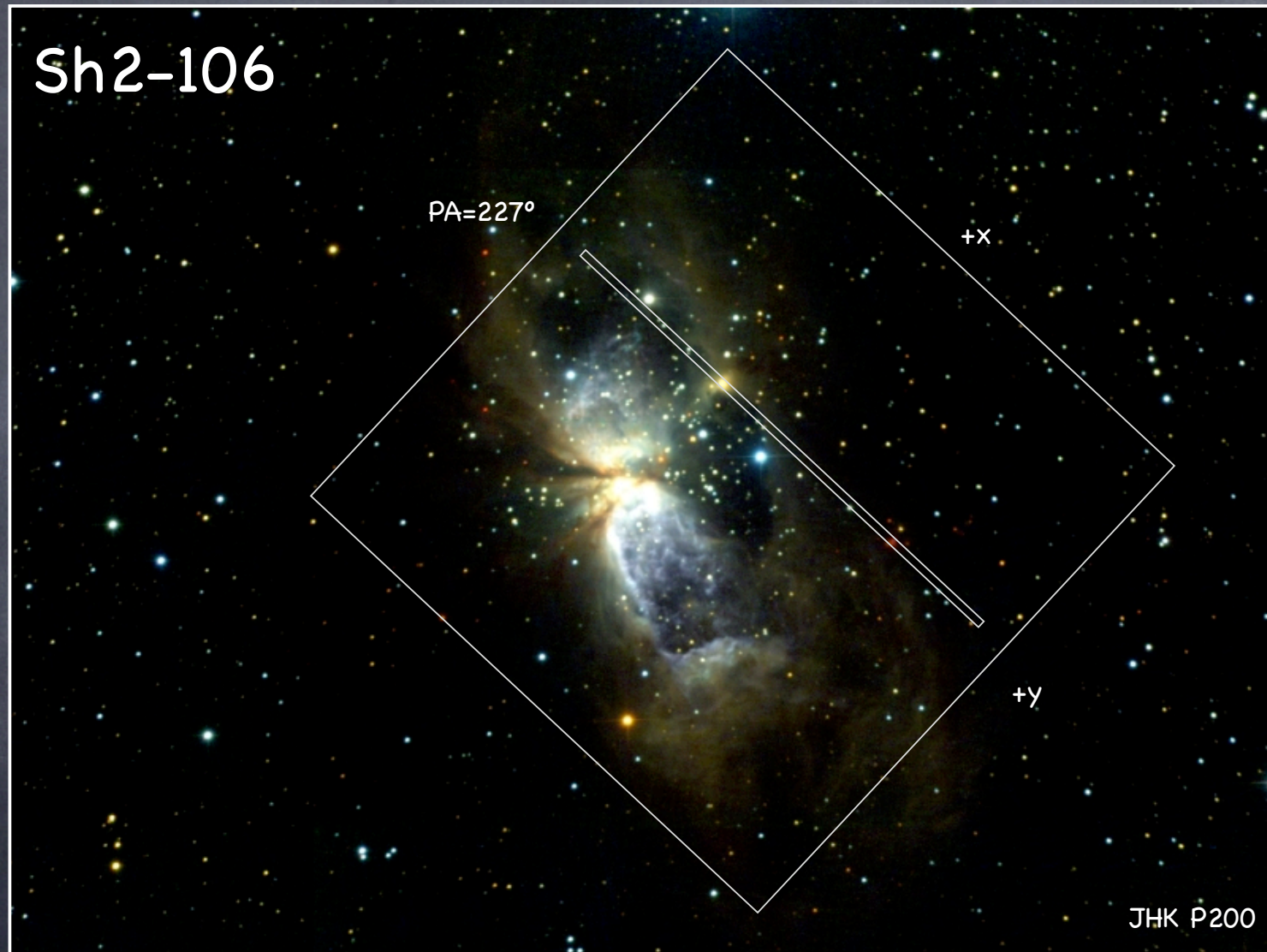
OFFSET

Sh2-106

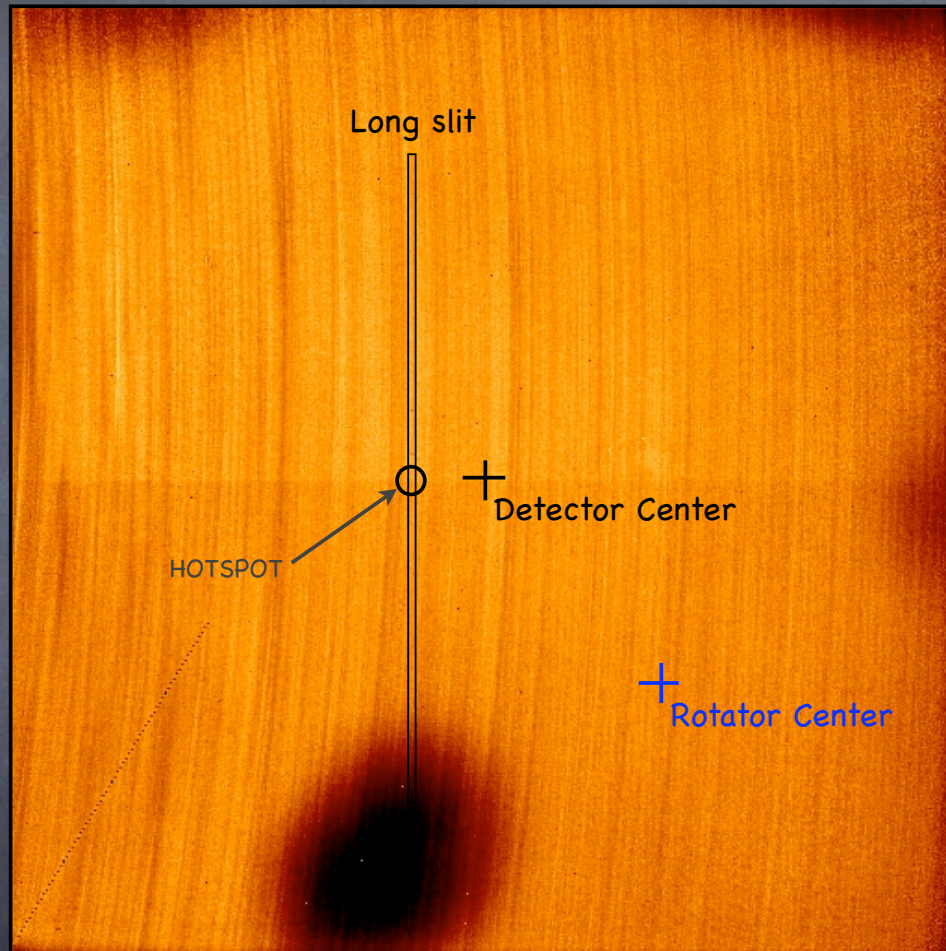


ROTANGLE, ROTMODE

Sh2-106

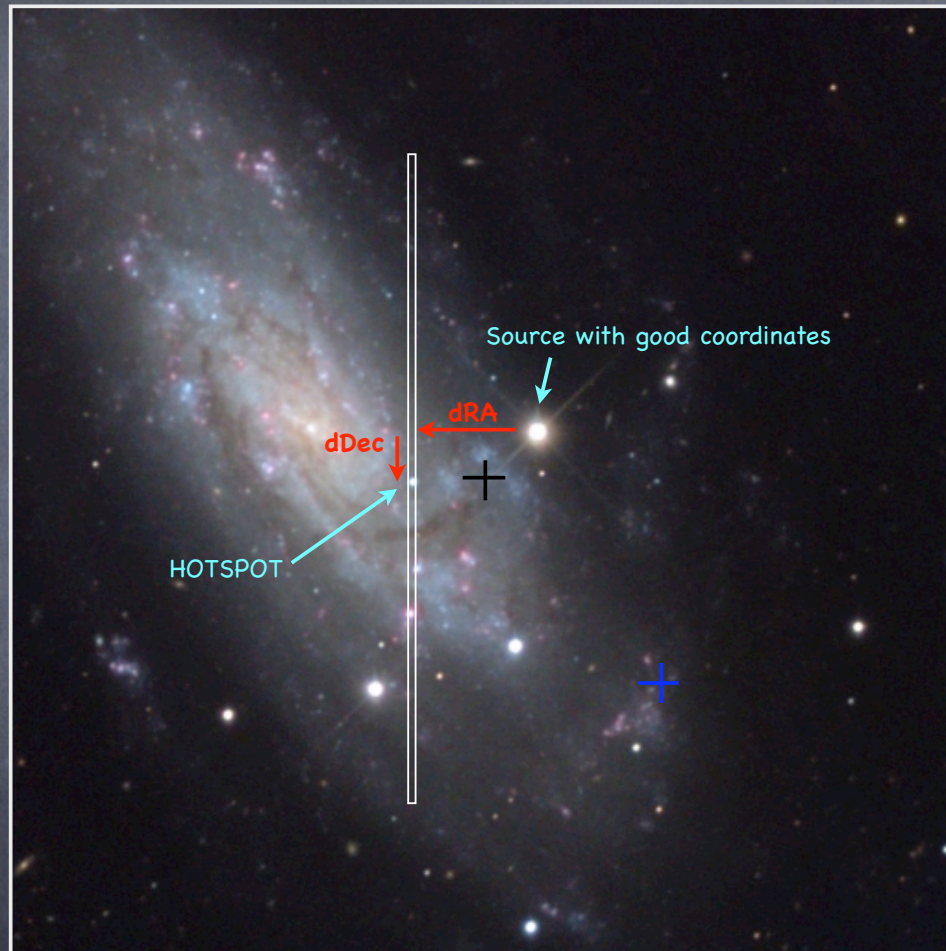


HOTSPOT



NIRC2 'Flatfield'

HOTSPOT



MODE

static, track, guide, active
adaptive, interferometric

GUIDESTARS(N)

coord1, coord2, system, equinox
pmcoord1, pmcoord2, epoch
appMag, filter, color, colorType
wavelength

WRAPFLAG

Forces mount and rotators to go to cable wrap position that maximizes time on source

SIDE

left, right, both

Preset sequence

Slew telescope & rotator

Send guider stage to predicted position

Open-loop track → set "on target" bit

Guider acquisition sequence:

Obtain full frame AC image

ID guide star

Offset tel/guider to center star on w

Start XY guiding → set "guiding" bit

Initiate WFS on w → set "active" bit

What should you send?



presetTelescope

Required parameters:

RA, Dec, SIDE

Observing with the IIF

part II: Now what?

offsetPointing

OFFSET

dcoord1, dcoord2, system

ROTANGLE

dtheta

OPE (optical path element)

Should normally use default

NEW_POSITION

SIDE

left, right, both

OFFSET "system" can be:

COORD_RADEC_SKY

COORD_RADEC_FOCAL

COORD_FOCAL_RADEC

COORD_ALTAZ

COORD_FOCAL_MM

COORD_FOCAL_PIX

How does offsetPointing work?

Move guider stage?

Yes

No

Update coordinates?

Yes

No

(closed loop)

DITHER

New_Position+

(open loop)

Get Sky Frame
(multi-cmd sequence, but
guider must be able to
resume without acq.seq.

Mask/Slit Alignment

offsetGuiding
(GCS internal function
unless Instrument has
an internal guider)

Pointing Correction

New_Position-

Offset sequence

Pause guiding & WFS -> "guiding" & "active"

Offset guider stage, rotator, and mount*

Resume guiding & WFS -> "guiding" & "active"

*Binocular mode: offsets that move the mount are accommodated with a **synchronized offset** of mount and secondary on the "other" side of the telescope such that the science field remains stationary there.

offsetPointing

Required parameters:

dRA, dDec, NP, SIDE

Observing with the IIF

part III: Command Summary

Observing: Authorize, Deauthorize, PresetTelescope, OffsetPointing, Pause/ResumeGuiding, Step/MoveFocus, CancelCommand;

LBC: GetRotatorTrajectory, OffsetGuiding

Non-observing: SetRotator (replaces 7 current IIF calls?)

Informational: GetCommandStatus, Get/Set(Multi)Parameter, LogEvent

AdaptiveOptics: AOPreset, AOAcquireRef, AORefine, AOSTart, AOffsetXY, AOffsetZ, AOCorrectModes, AOSTop, AOPause, AOResume, AOUserPanic

Interferometers: Move, MoveXY, MoveXYZ, RotateCommon, RotatePrimary, RotateZ, TelescopeMove, TelescopeRotate, TelescopeScale, TipTilt

Deprecated(?): UpdateGuidestar, Stop/StartGuiding, PresetGuiding

Observing with the IIF

part IV: Stump the chump!

Challenge to the Instrument Teams:

Come up with an observing scenario that you think cannot be done with the given functionality of the IIF/TCS.