

Absolute Flux Calibration

Melanie Krips

I. Why?

**II. Primary/Secondary Flux
Calibrators**

**III. Practical Tips to Calibrate
the Fluxes of your Sources**

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Calibrators**

**III. Practical Tips to Calibrate
the Fluxes of your Sources**

Why?

Need to go from Temperatures (K) to Fluxes (Jy):

$$S(\text{Jy}) = \eta_{\text{eff}} \times T(\text{K})$$

$$\eta_A = \frac{2k}{A_{\text{geom}}} \frac{T_A'}{S_V}$$

Point source
sensitivity or
aperture efficiency

(remember also talk by C.Kramer!)

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(remember also talk by M.Bremer!)

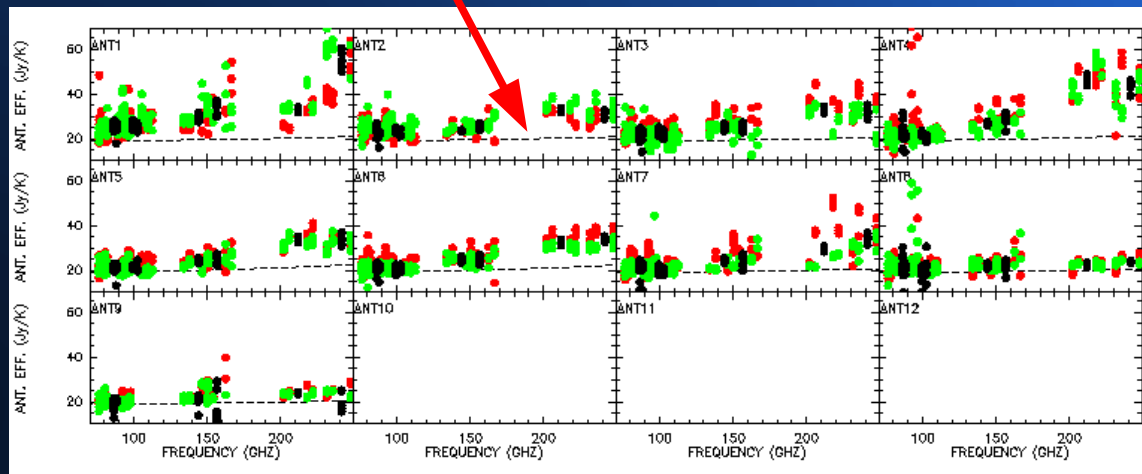
Antenna Efficiencies
Phase noise
Decorrelation
Pointing/Focus

Antenna Efficiencies:

Mainly defined by Ruze formula, i.e., via antenna surface accuracy σ (which can be measured with holographies, usually 30-40 μm):

$$A_{\text{eff}} \sim \exp(-4\pi\sigma/\lambda)^2$$

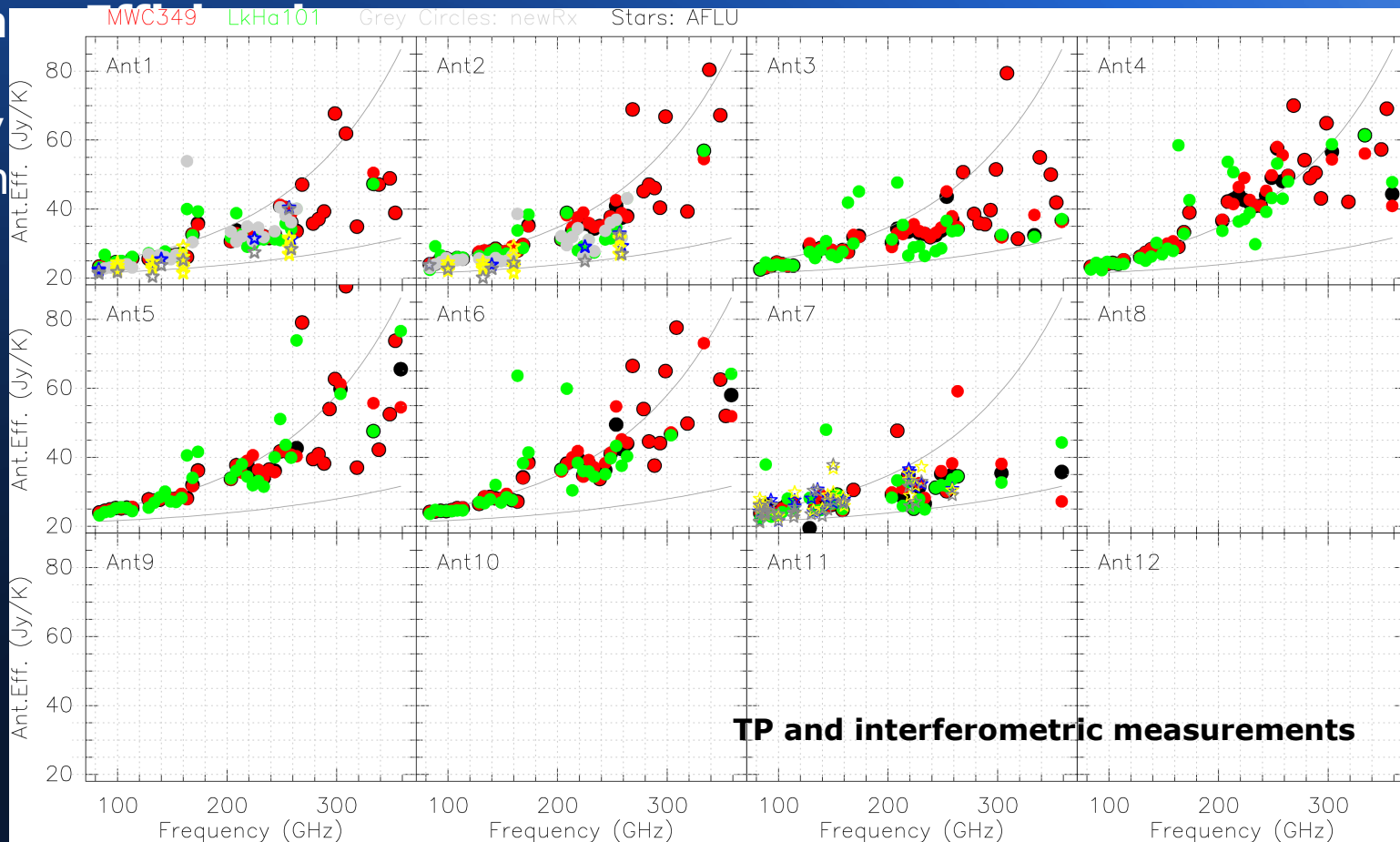
(remember also talk by C. Kramer!)



TP measurements
on Mars and/or
Saturn

Why?

Anten
Mainly
(which



Why?

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Antenna Efficiencies
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Need to go from Temperatures (K) to Fluxes (Jy):

$$S(\text{Jy}) = \eta_{\text{eff}} \times T(\text{K})$$

η_{eff} can vary from
observation to
observation
(also frequency
dependent)!!

Antenna Efficiencies
Phase noise
Decorrelation
Pointing/Focus

Need to go from Temperatures (K) to Fluxes (Jy):

$$S(\text{Jy}) = \eta_{\text{eff}} \times T(\text{K})$$

Do an absolute Flux Calibration:

We measure $T(\text{K})$ and if we know $S(\text{Jy})$ on one source in the track, we can derive η_{eff} and apply it to all other sources!

-> Need an Absolute Flux calibrator!!!!

I. Why?

**II. Primary/Secondary Flux
Calibrators**

**III. Practical Tips to Calibrate
the Fluxes of your Sources**

What do we want in a flux calibrator?

- preferentially well known properties (such as flux SED, size if not pointlike)
- strong ($>100\text{mJy}$) emission at mm wavelengths
- compact ($\ll 1''$) emission at mm wavelengths
- emission should not be variable in time
- preferentially with long LST range (i.e., high declination source)
- no or only little sun-avoidance

- 1.) Quasars**
- 2.) Planets**
- 3.) Solar Bodies
(Satellites, Asteroids,
Dwarf Planets)**
- 4.) Radio Stars**

1.) Quasars

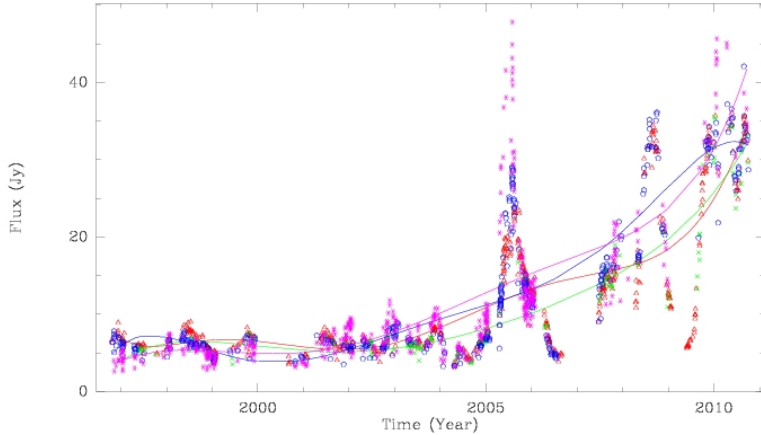
2.) Planets

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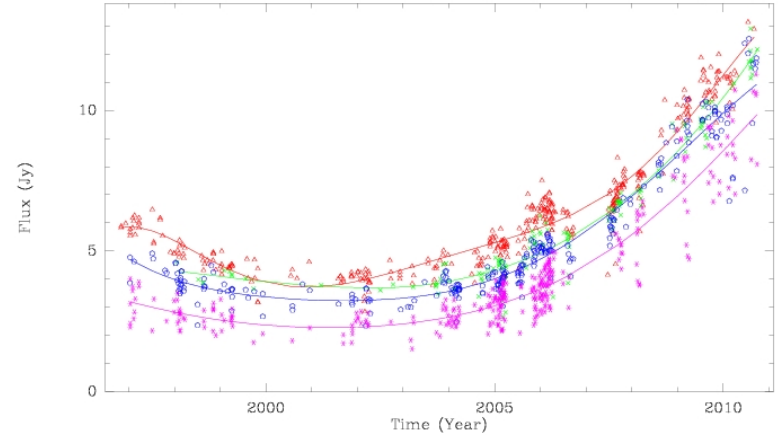
4.) Radio Stars

Flux Calibrators: Quasars

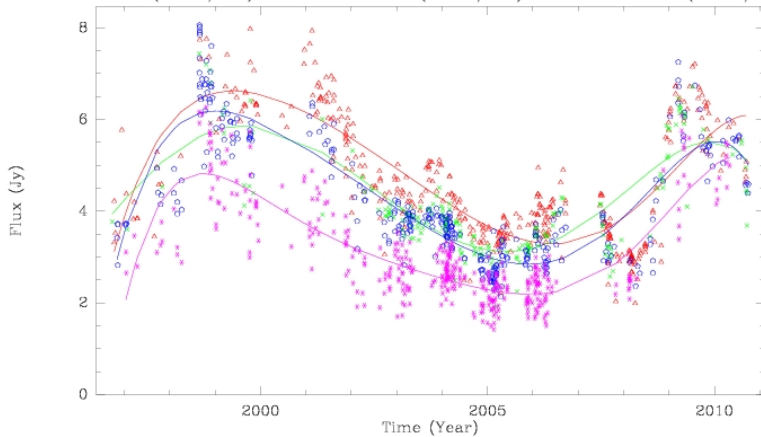
Source: 3C454
 ν (GHz): $\blacktriangle 90 \times 100 \times 110 \times 230$; MEAN(RMS): 12.37(8.62) 10.41(7.71) 13.15(9.77) 11.23(9.22)
 $F(\nu)=F_0(\nu/100)^{n}$: pwv @ 1mm < 3.5 mm pwv @ 3mm < 7.0 mm
 $F_0=10.41$ n = -1.64($\nu=90/100$) $F_0=10.41$ n = 2.45($\nu=100/110$) $F_0=12.24$ n = -0.10($\nu=90/230$)
 $F_0=12.78$ n = 0.31($\nu=90/110$) $F_0=10.41$ n = 0.09($\nu=100/230$) $F_0=13.43$ n = -0.21($\nu=110/230$)



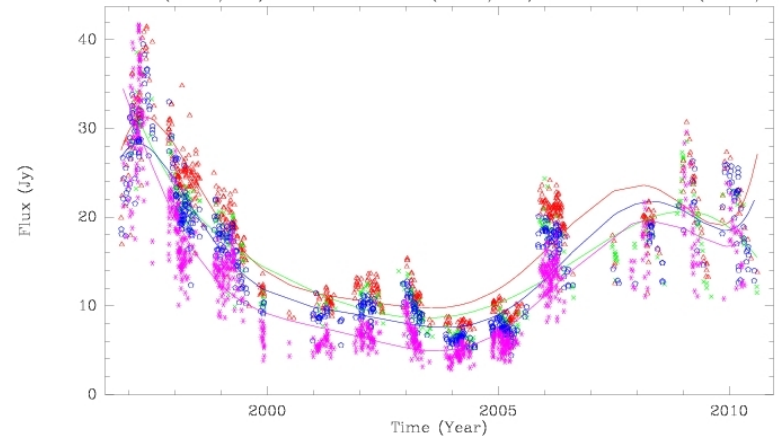
Source: 3C84
 ν (GHz): $\blacktriangle 90 \times 100 \times 110 \times 230$; MEAN(RMS): 6.42(2.18) 6.20(2.50) 5.33(2.35) 3.96(1.97)
 $F(\nu)=F_0(\nu/100)^{n}$: pwv @ 1mm < 3.5 mm pwv @ 3mm < 7.0 mm
 $F_0=6.20$ n = -0.33($\nu=90/100$) $F_0=6.20$ n = -1.57($\nu=100/110$) $F_0=6.08$ n = -0.51($\nu=90/230$)
 $F_0=5.82$ n = -0.92($\nu=90/110$) $F_0=6.20$ n = -0.54($\nu=100/230$) $F_0=5.54$ n = -0.40($\nu=110/230$)



Source: 3C345
 ν (GHz): $\blacktriangle 90 \times 100 \times 110 \times 230$; MEAN(RMS): 4.59(1.31) 4.05(1.05) 4.23(1.36) 2.98(1.06)
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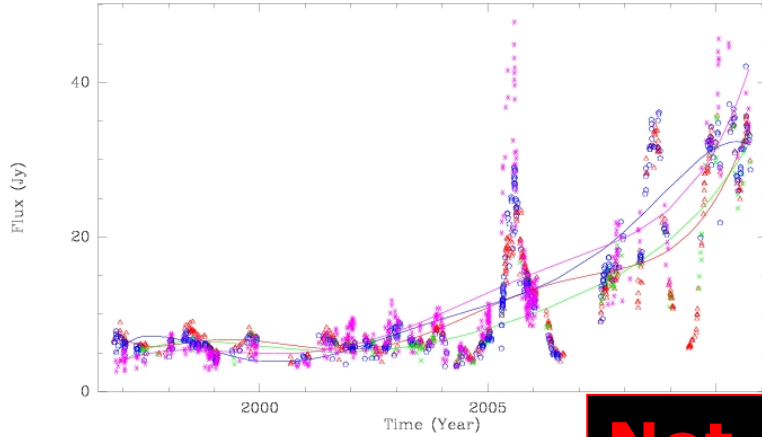


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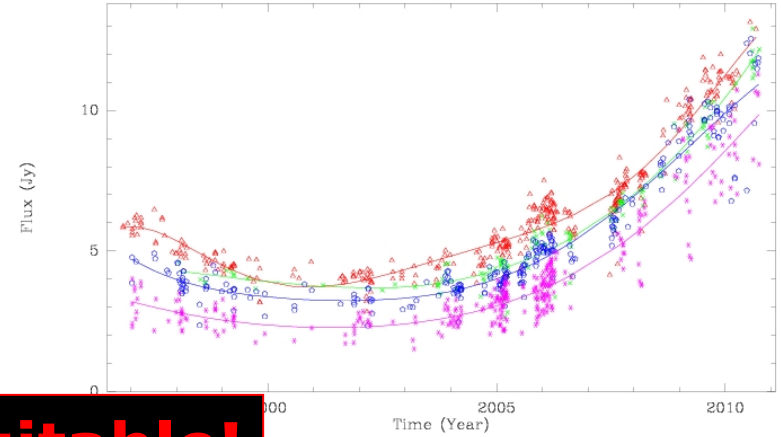


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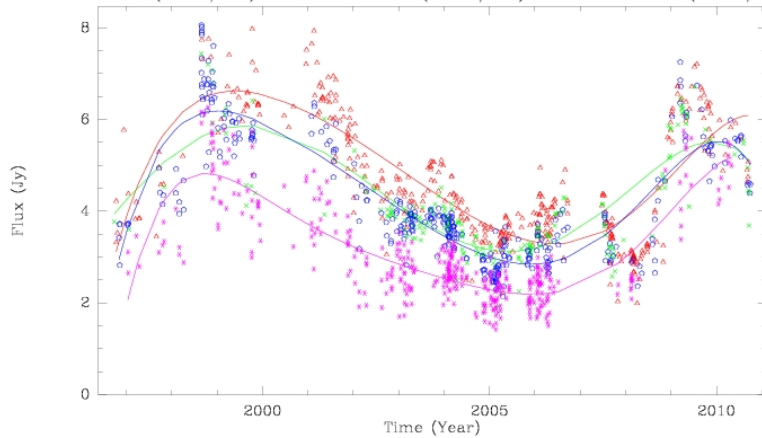


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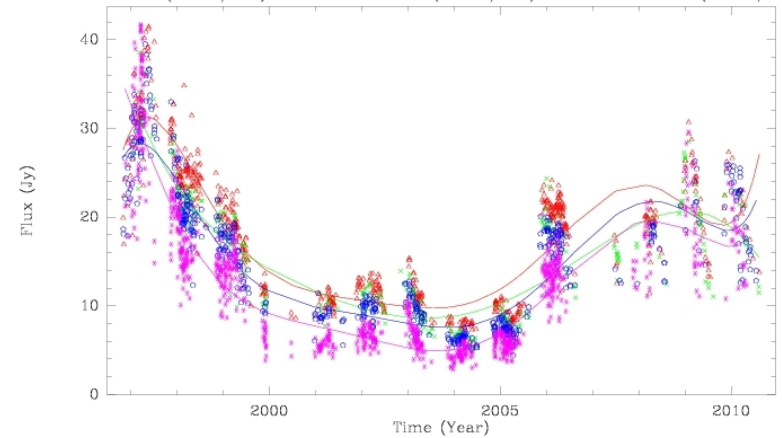


Not suitable!

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2.) Planets

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Flux Calibrators: Planets

- Pro:
 - most of the solar planets have strong mm-emission and reasonably well derived flux models
- Contra:
 - 1.) Fluxes not completely constant
 - 2.) They start to be resolved ($\geq 3''$) already at 3mm
 - 3.) Some of them have broad molecular line absorption (e.g., Mars, Jupiter, Saturn)
 - 4.) Not always visible, i.e., more constraints due to sun-avoidance, short LST ranges



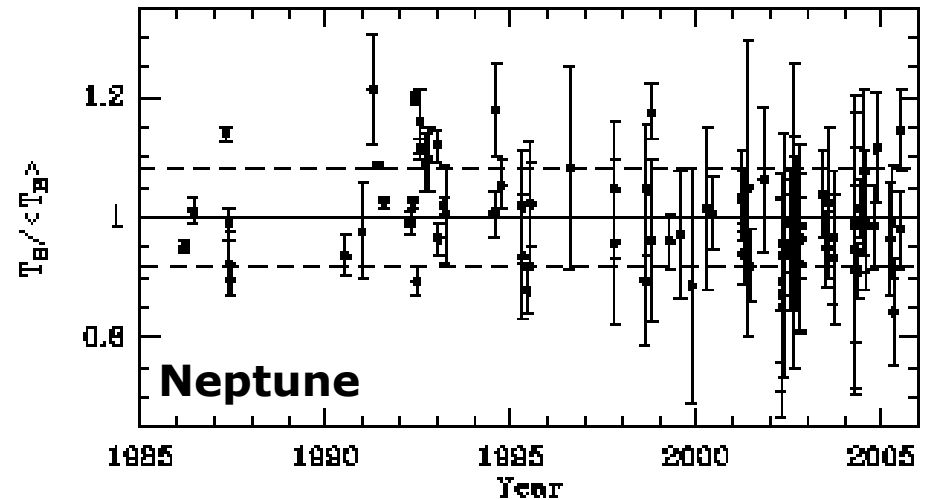
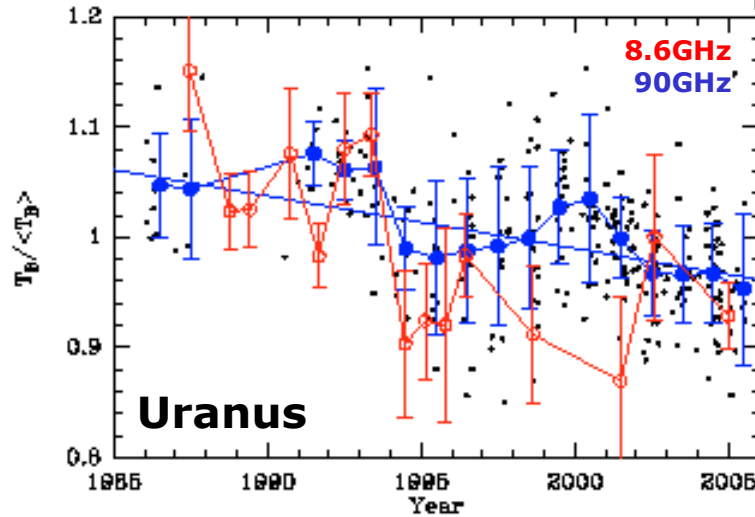
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Flux Calibrators: Planets

Kramer et al. (2008)

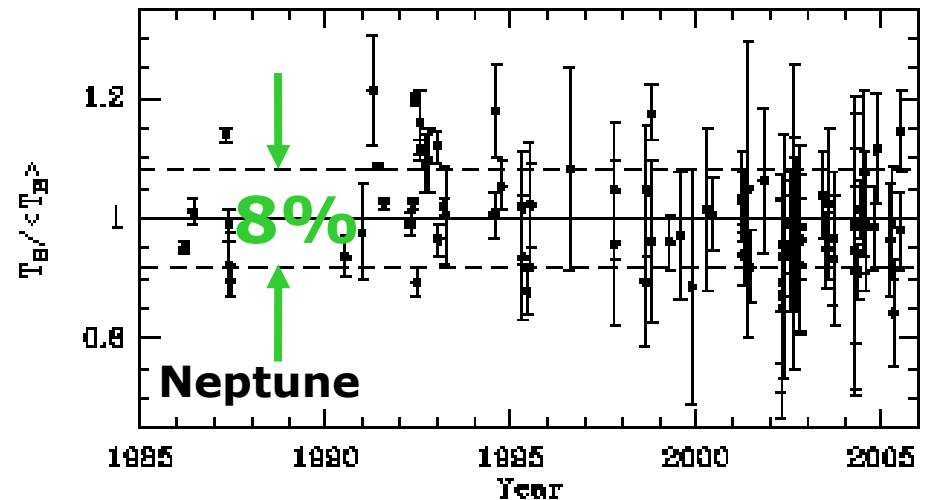
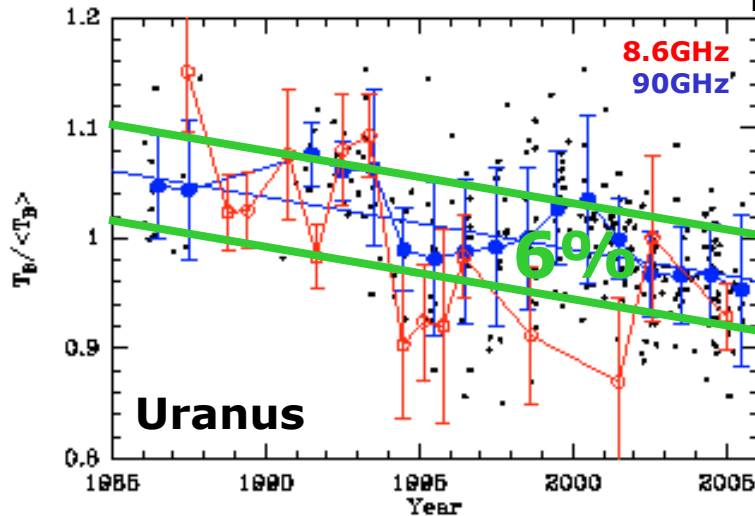


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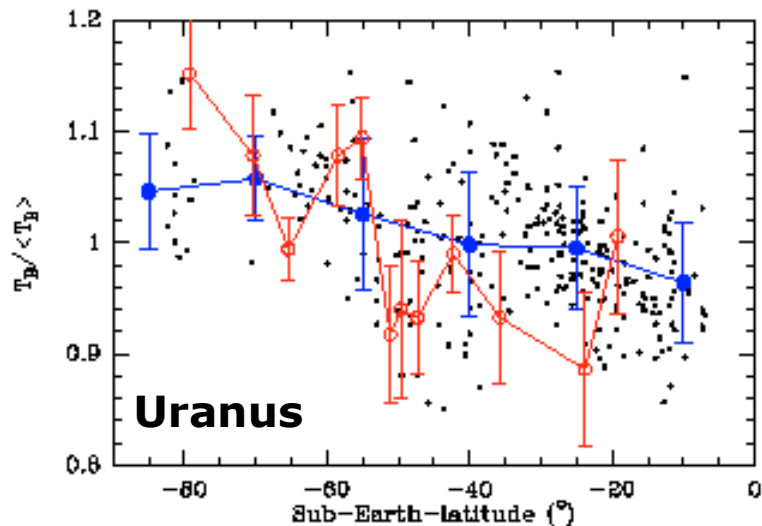
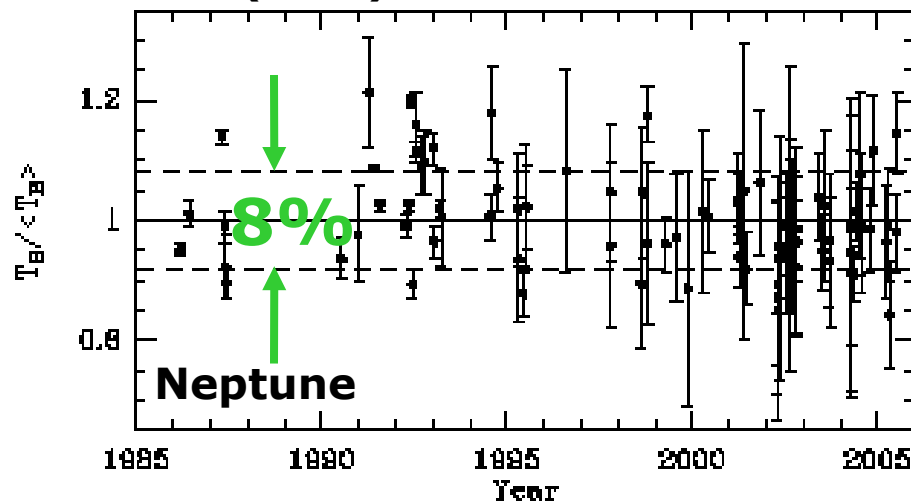
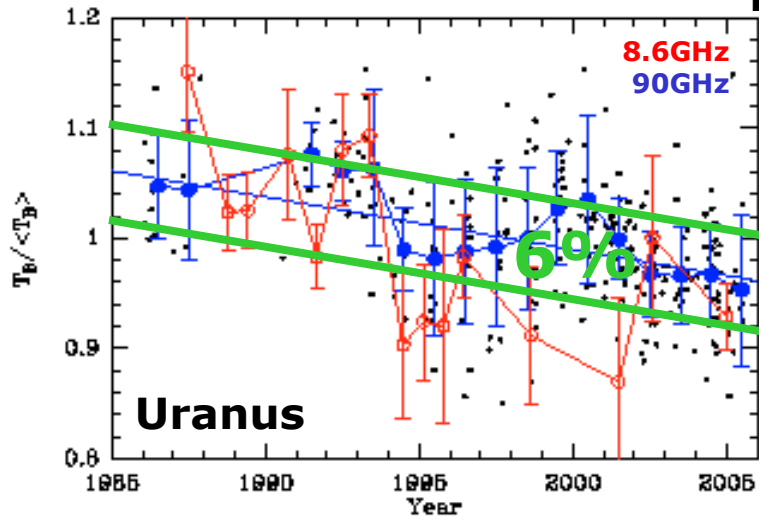


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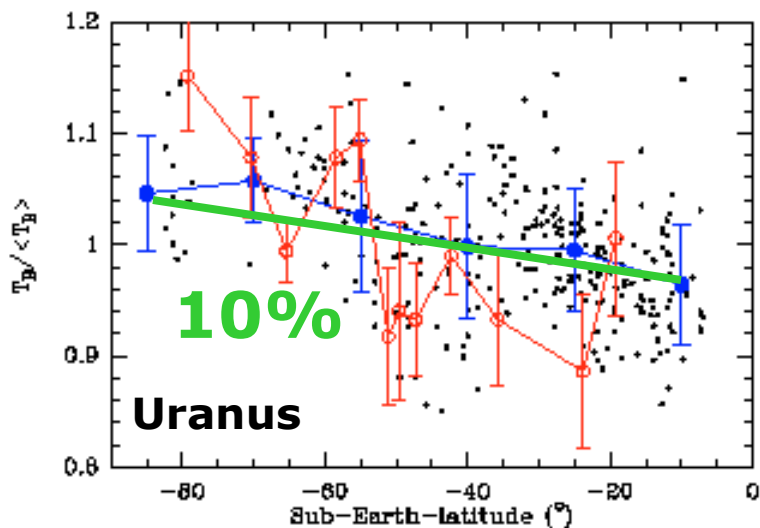
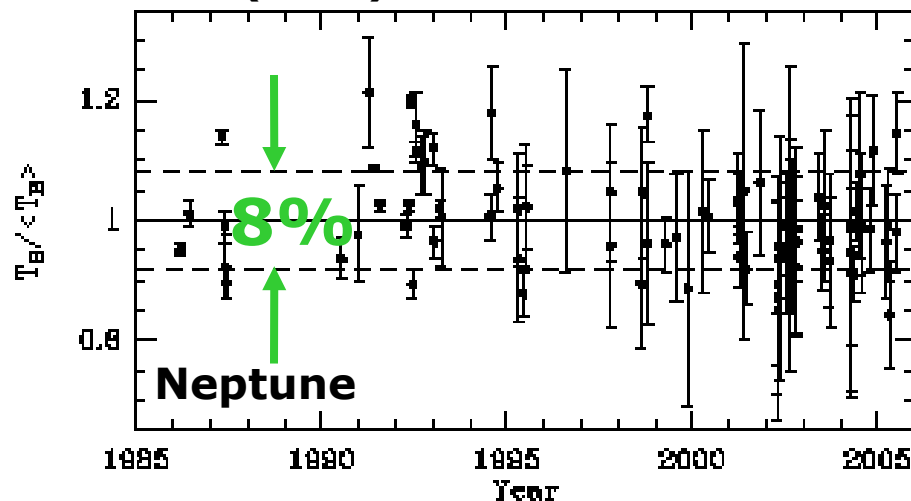
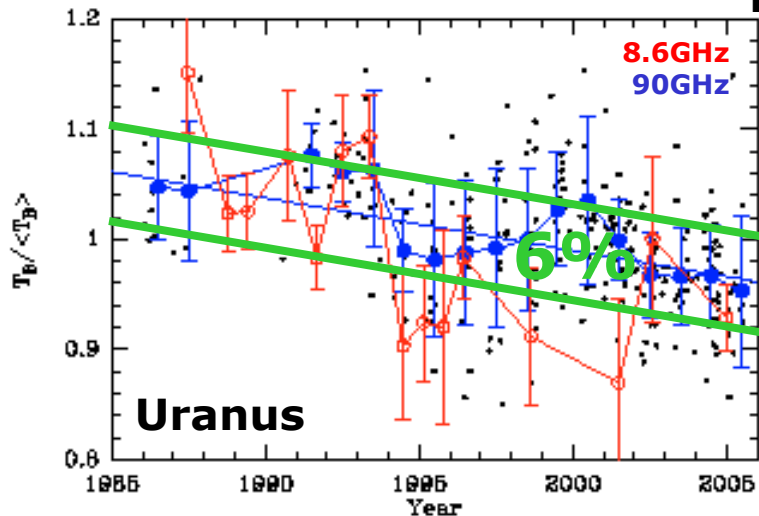
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the constraints due to sun-



Flux Calibrators: Planets

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Flux Calibrators: Planets

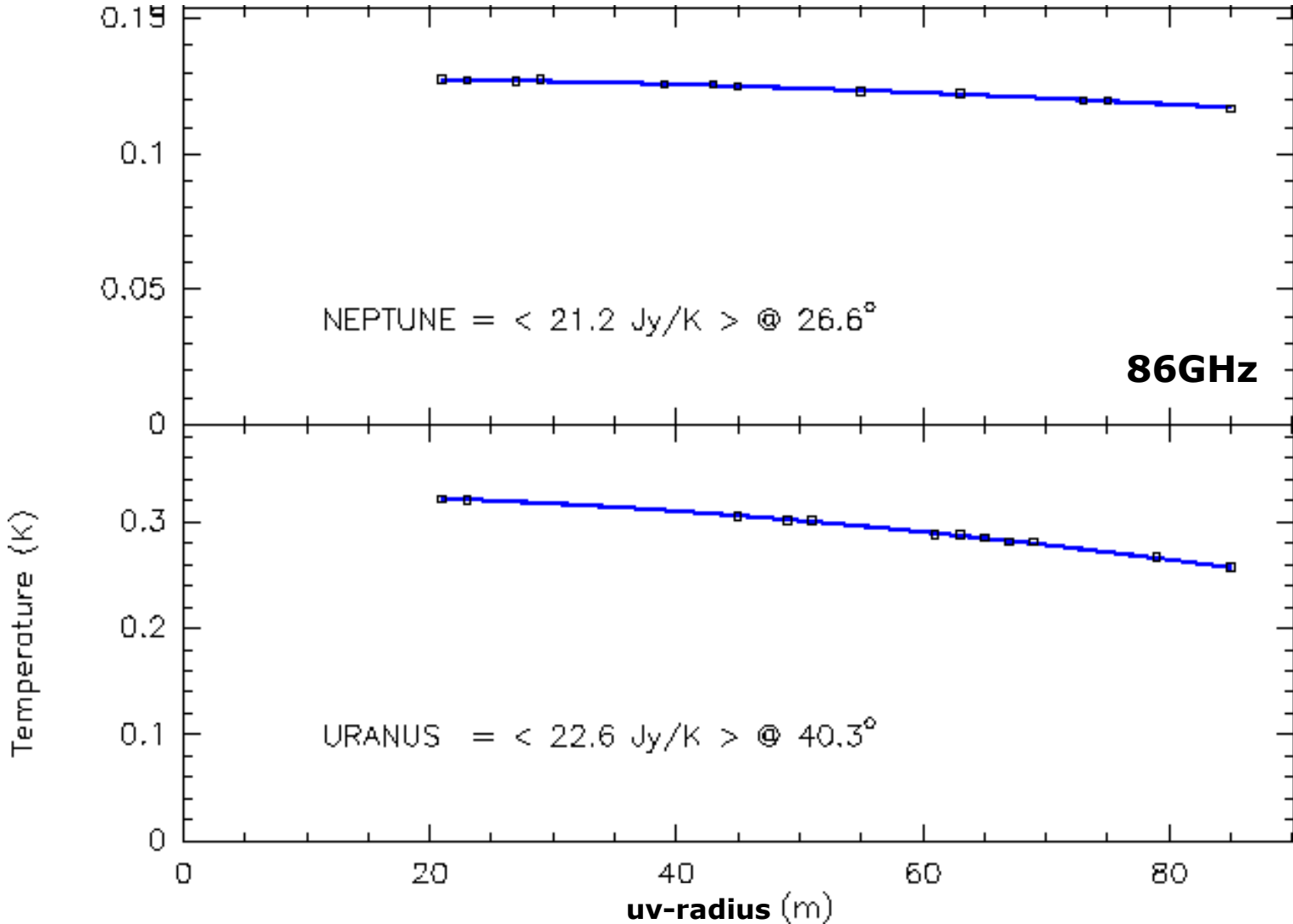
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Flux Calibrators: Planets

- Pro
- mo
- rea

- Co
- 1.)
- 2.)
- 3.)
- 4.)



Jupiter

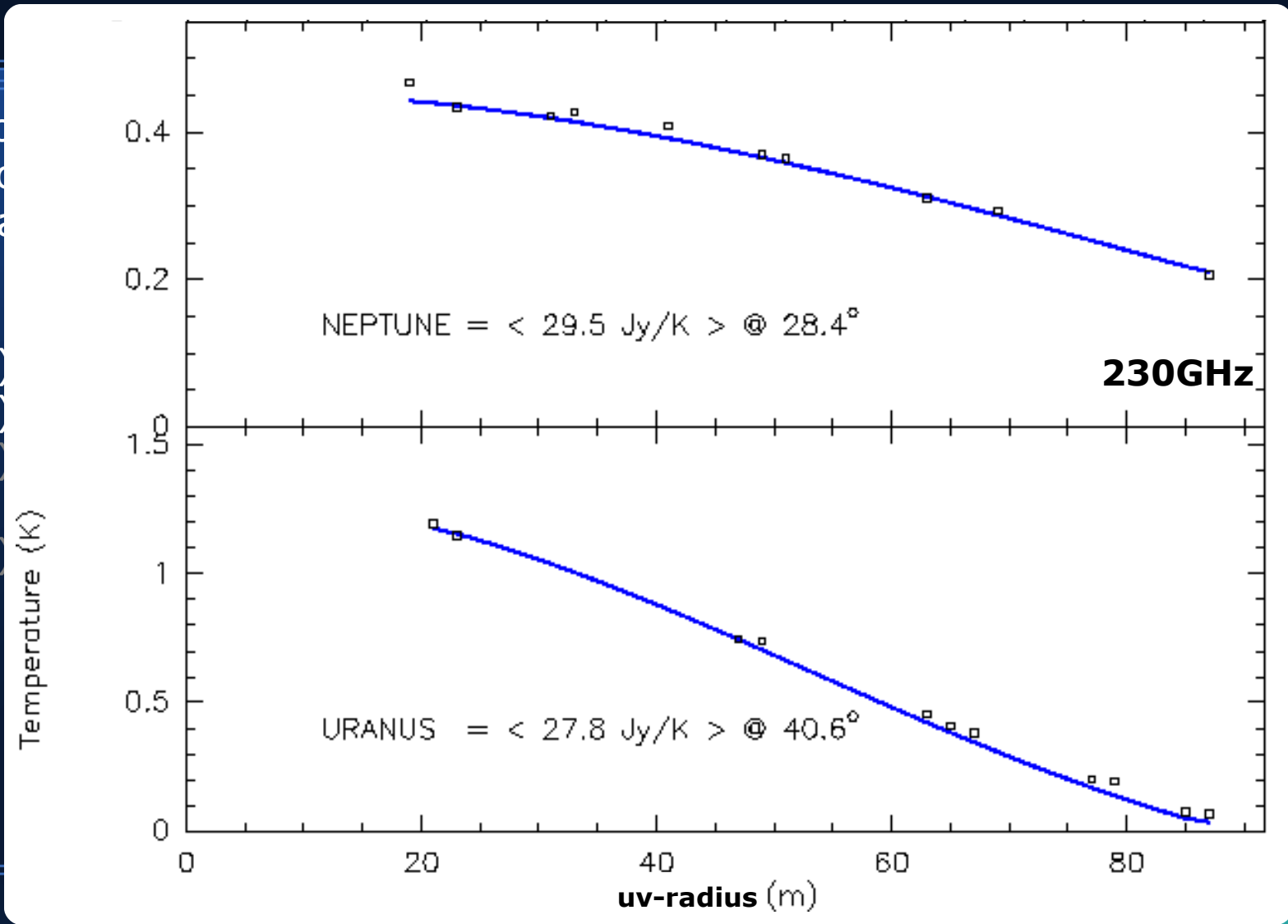
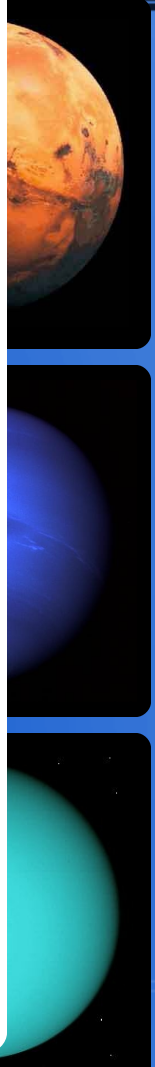
Saturn

Neptune

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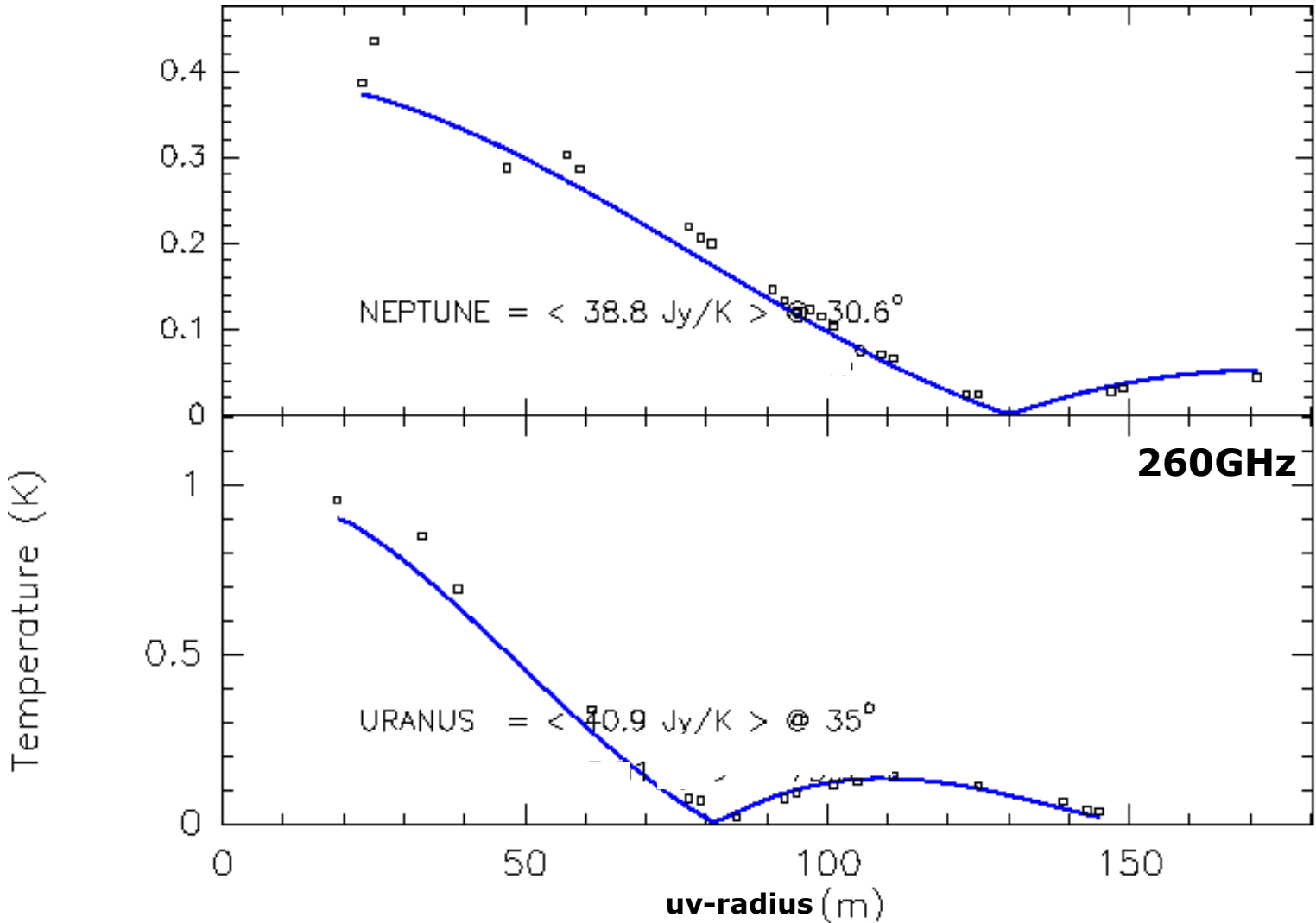
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Neptune

Flux Calibrators: Planets

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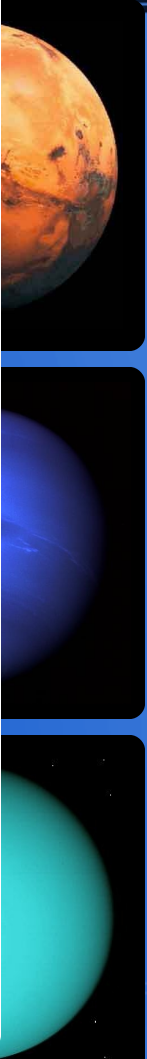
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Jupiter

Saturn

Neptune



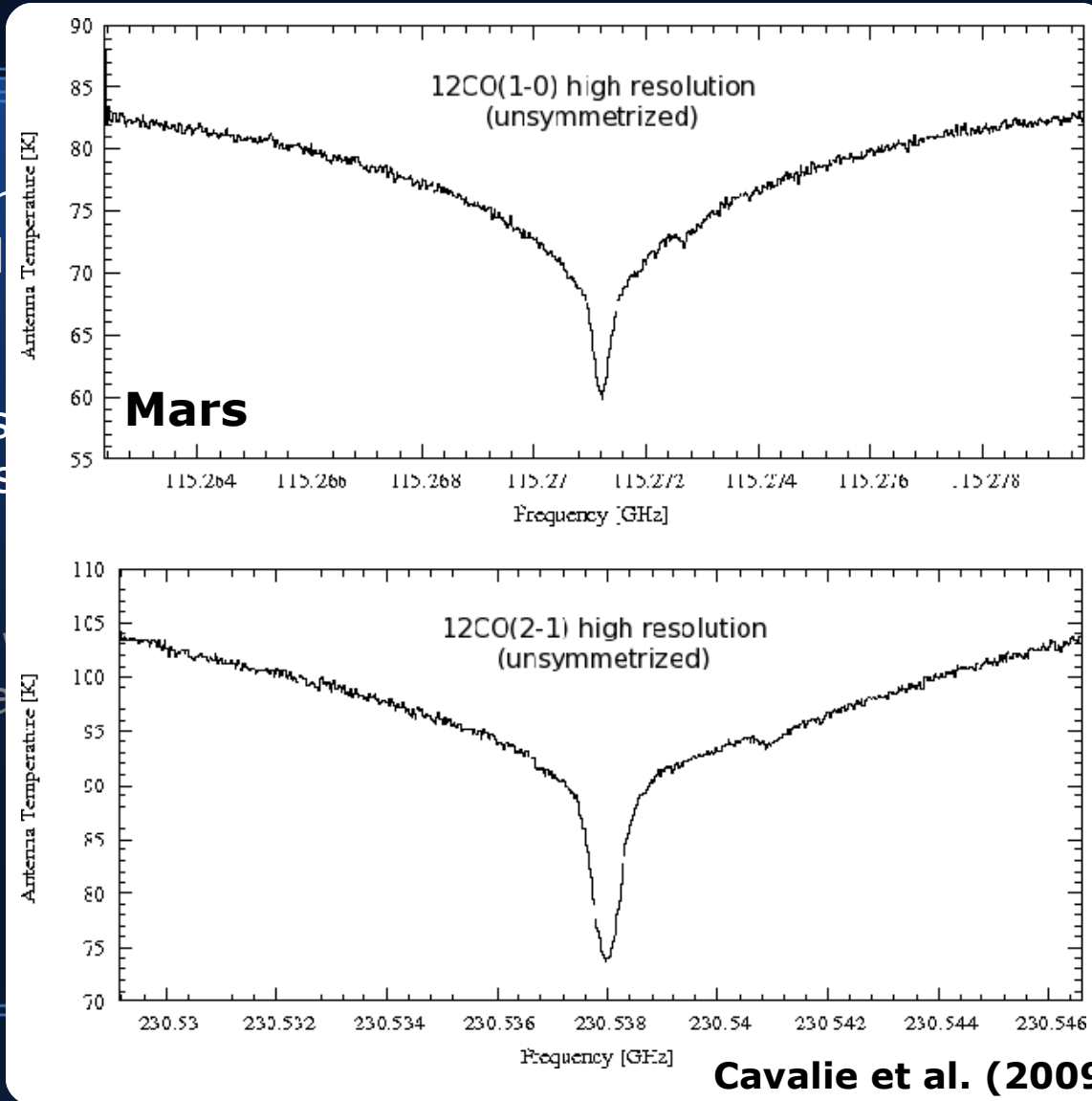
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Flux Calibrators: Planets

- Pro:
 - most of the
 - reasonable
- Contra:
 - 1.) Fluxes
 - 2.) They s
 - 3.) Some
 - (e.g.,
 - 4.) Not al
 - avoida



Mars



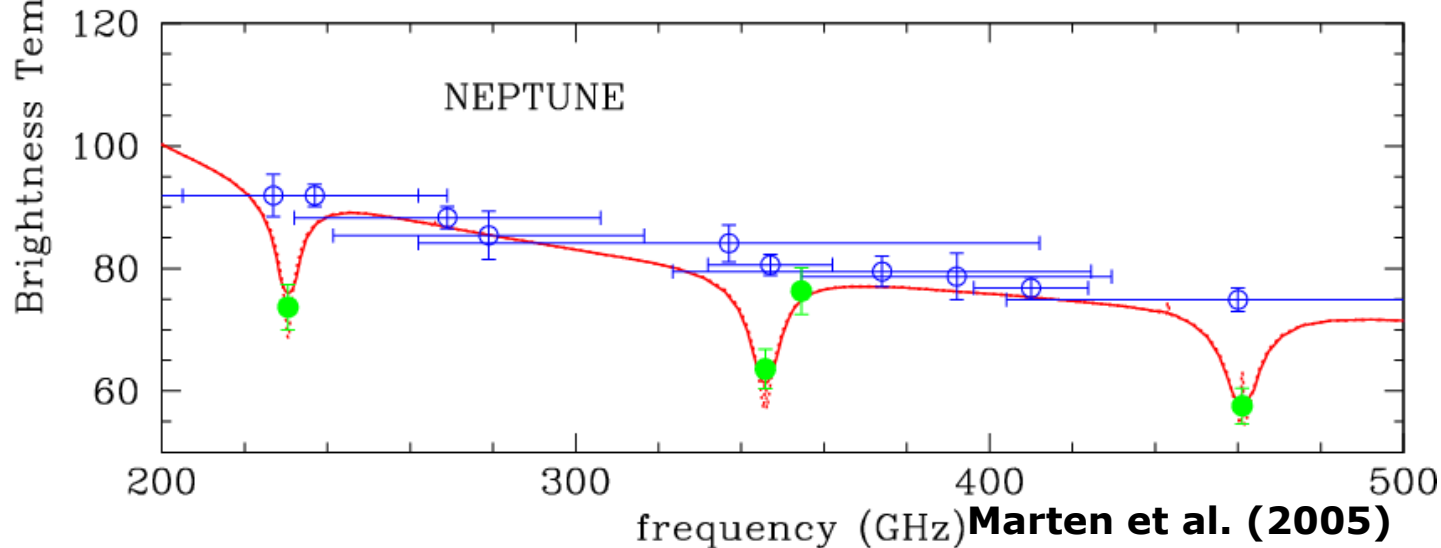
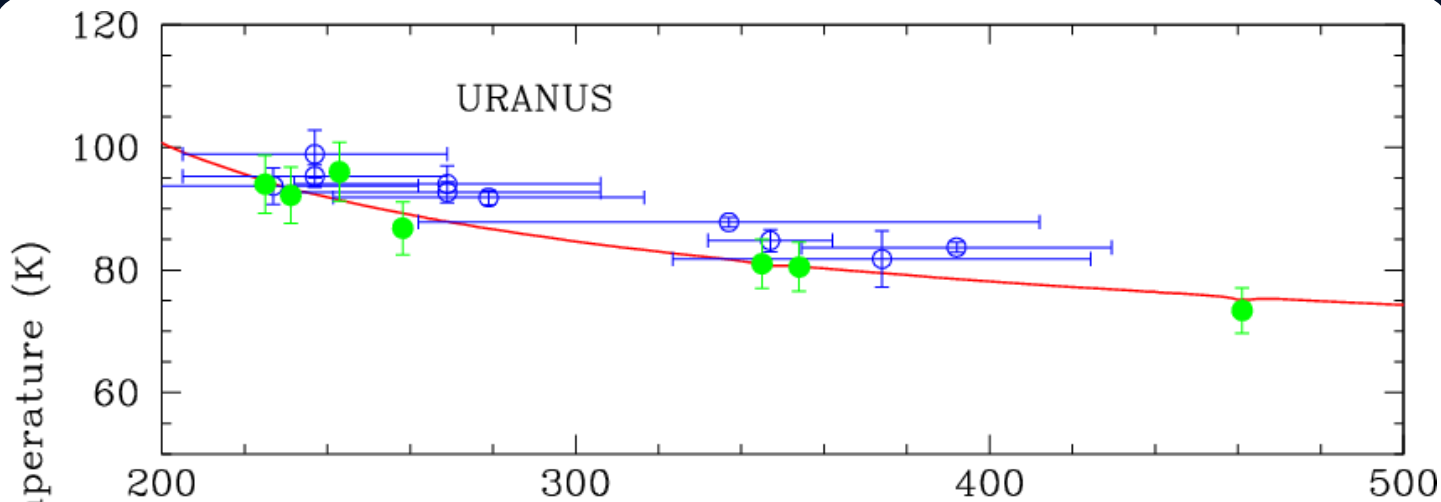
Uranus



Neptune

Flux Calibrators: Planets

- Pro
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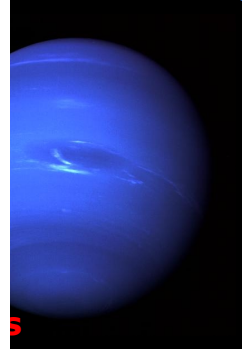


frequency (GHz) Marten et al. (2005)

Frequency [GHz]

Cavalié et al. (2009)

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Flux Calibrators: Planets

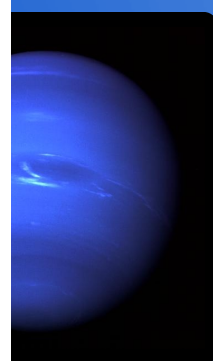
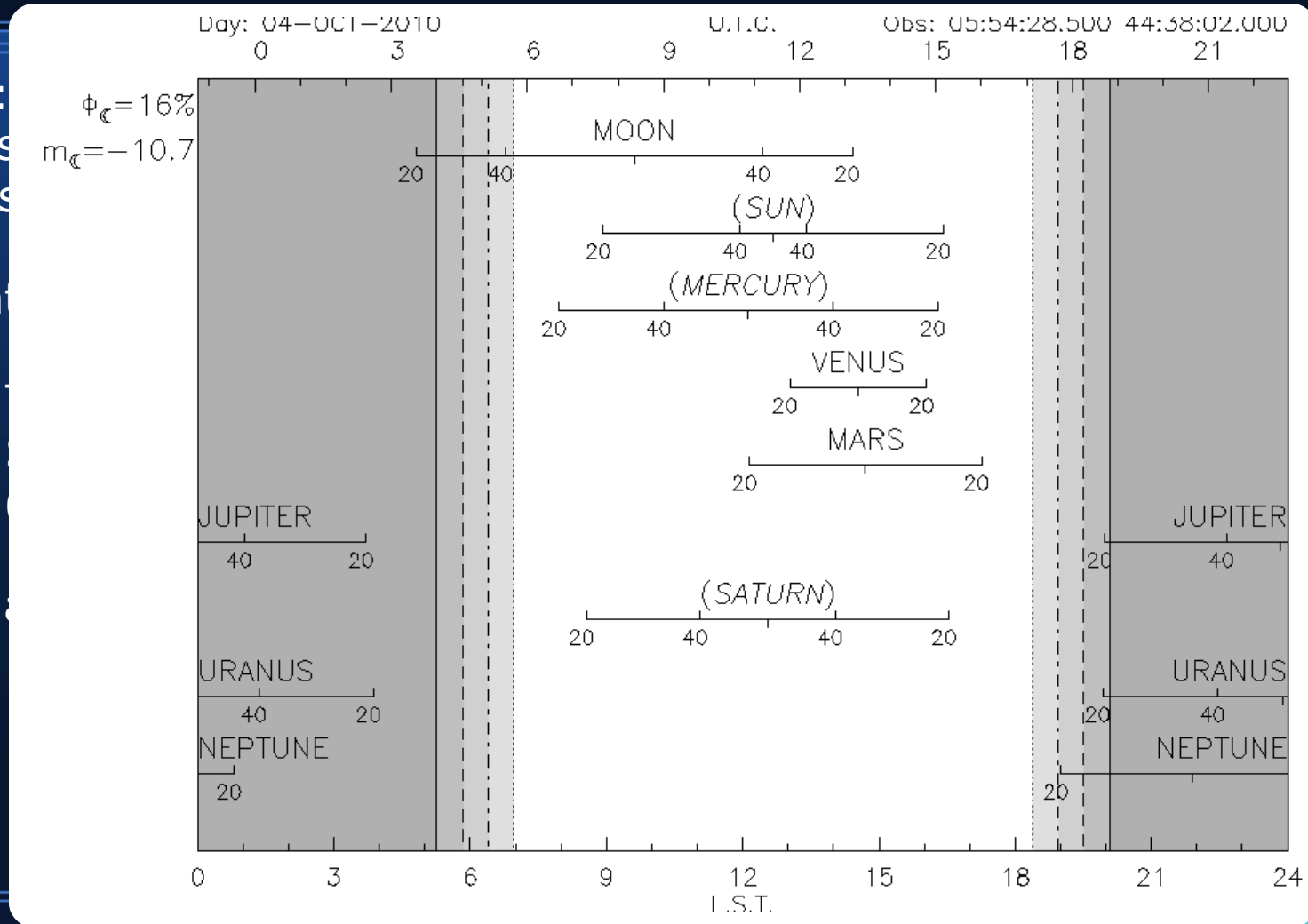
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Jupiter

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Neptune

1.) Quasars

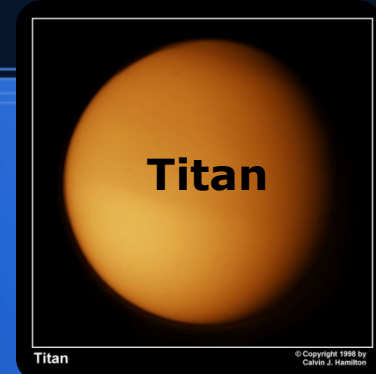
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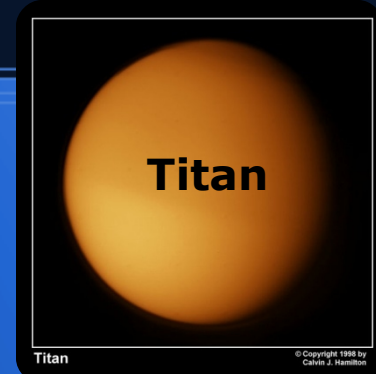
Flux Calibrators: Satellites

- Pro:
 - They are quite compact (hence better for extended configurations and/or higher frequencies than planets) and still sufficiently bright ($>500\text{mJy}@3\text{mm}$)
- Already regularly used at the SMA & ALMA:
Titan, Ganymede, Callisto
- Contra:
 - Titan also shows broad molecular lines
 - they are not always useable especially when they are too close to their 'mother'-planet (or each other); one needs at least $3xPB$
 - flux models not as well constrained as for planets



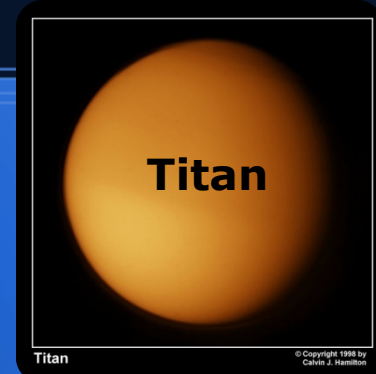
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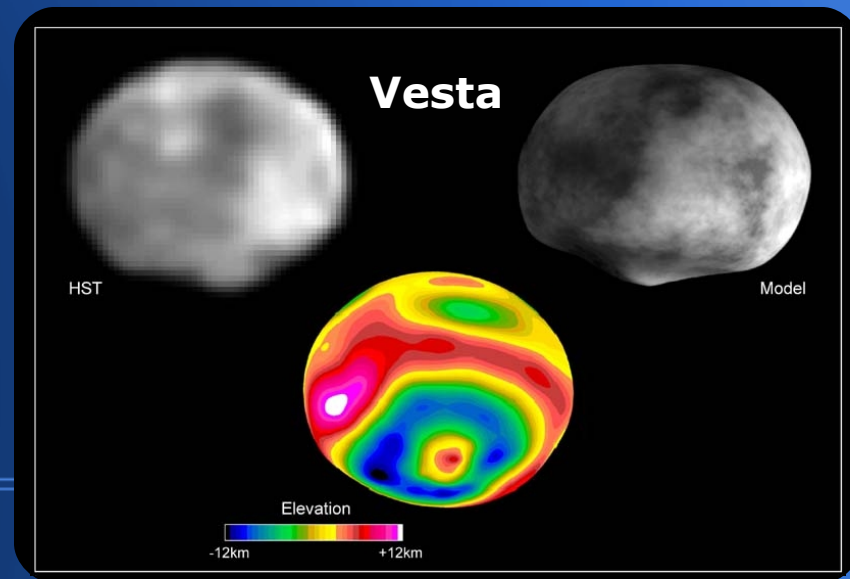
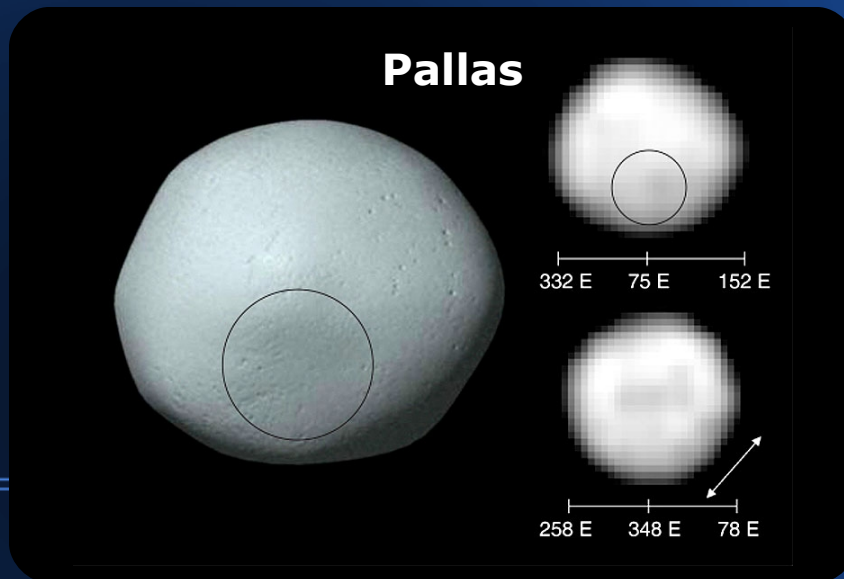
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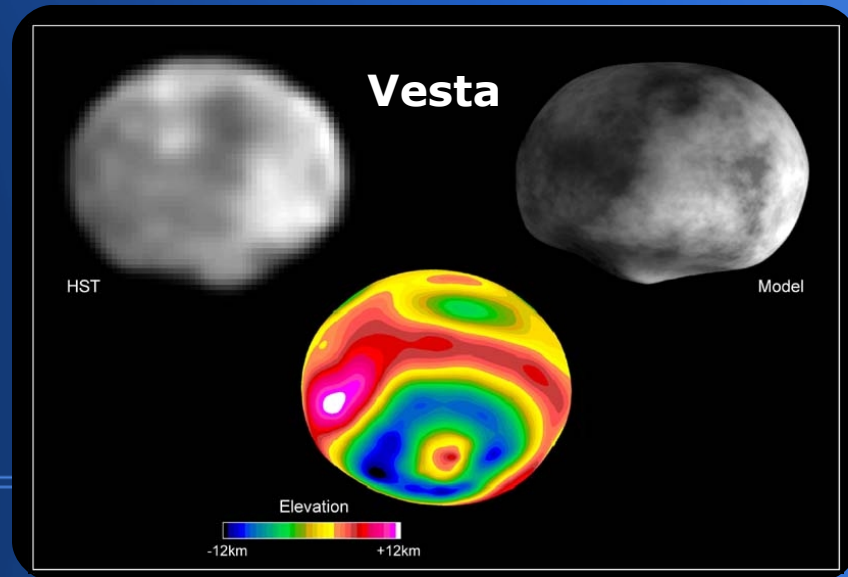
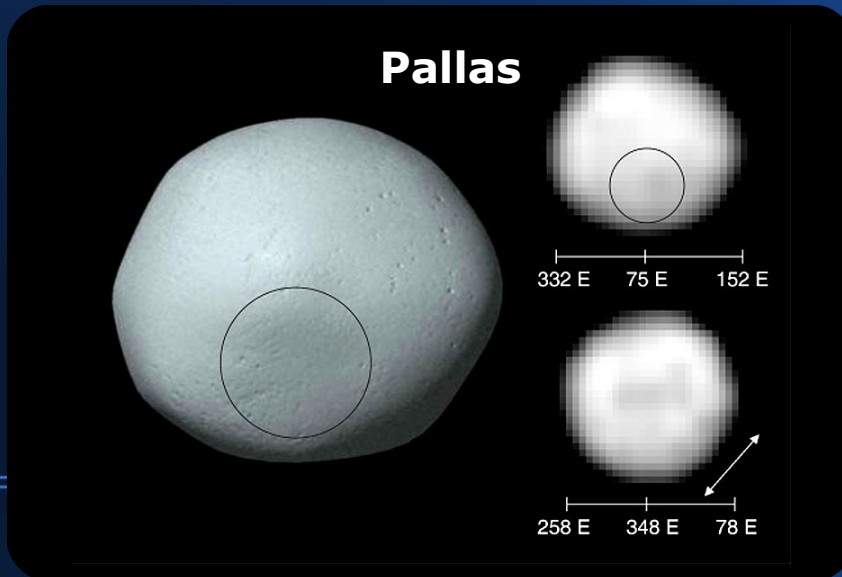
Flux Calibrators: Asteroids/Dwarf Planets

- Pro:
 - bright and relatively small solar bodies
- Contra:
 - Still uncertainties in their flux; some of them known to vary quite significantly within a day
 - irregular shapes



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 - irregular shapes



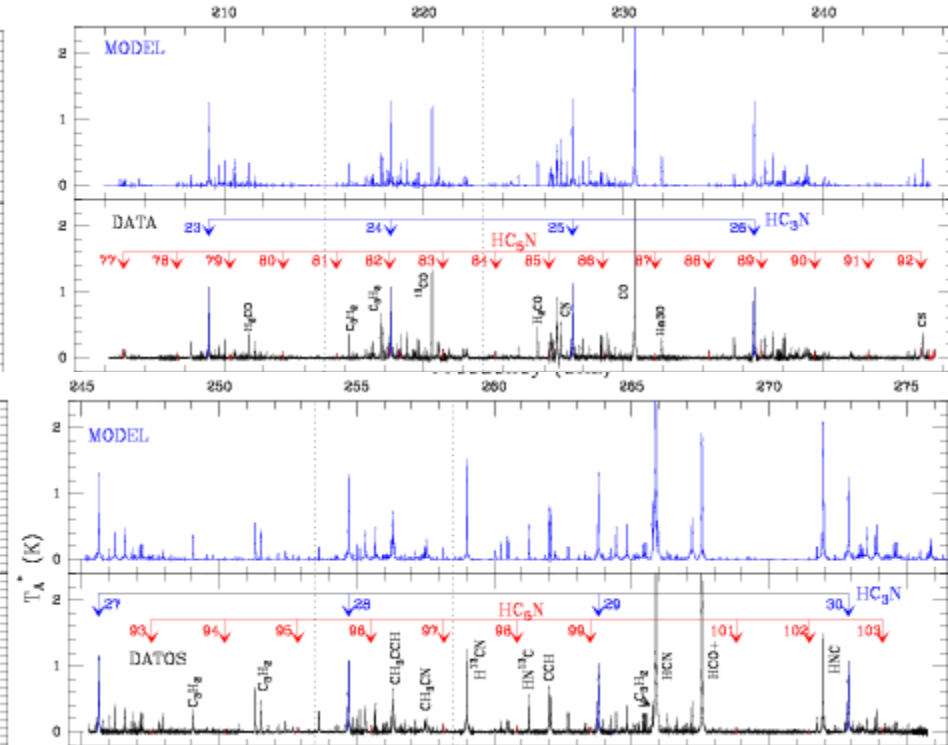
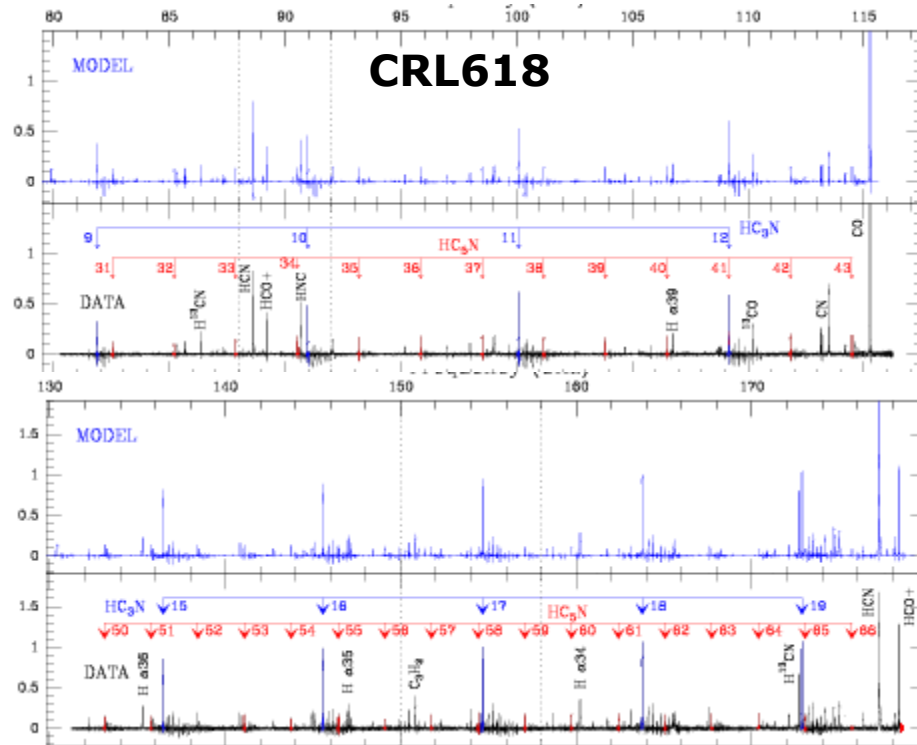
- 1.) Quasars
- 2.) Planets
- 3.) Solar Bodies
(Satellites, Asteroids,
Dwarf Planets)
- 4.) Radio Stars

Radio bright stars:

- MWC349 (binary star)
- CRL618 (PPN)
- W3OH (HII region)
- NGC7072 (young PN)
- NGC7538 (HII region)
- K3-50A (HII-region)
-

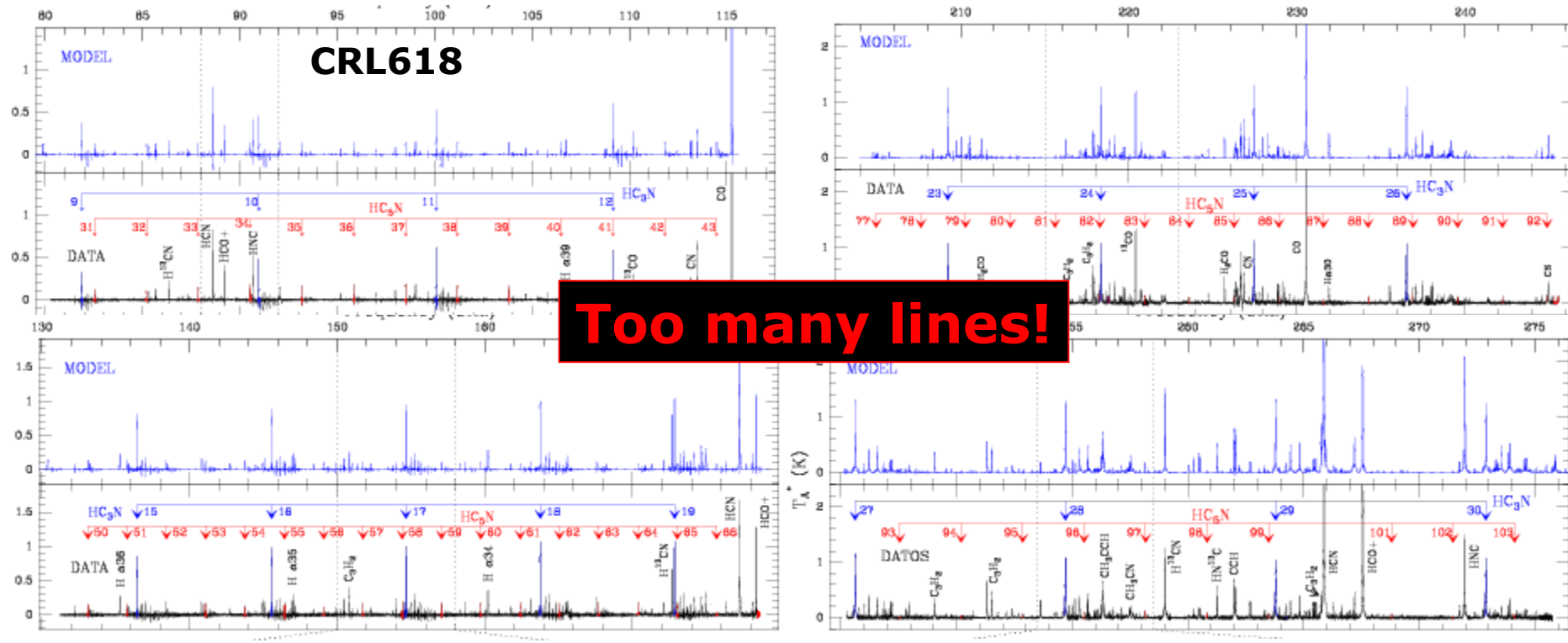
Flux Calibrators: Radio Stars

Pardo et al. (2009)

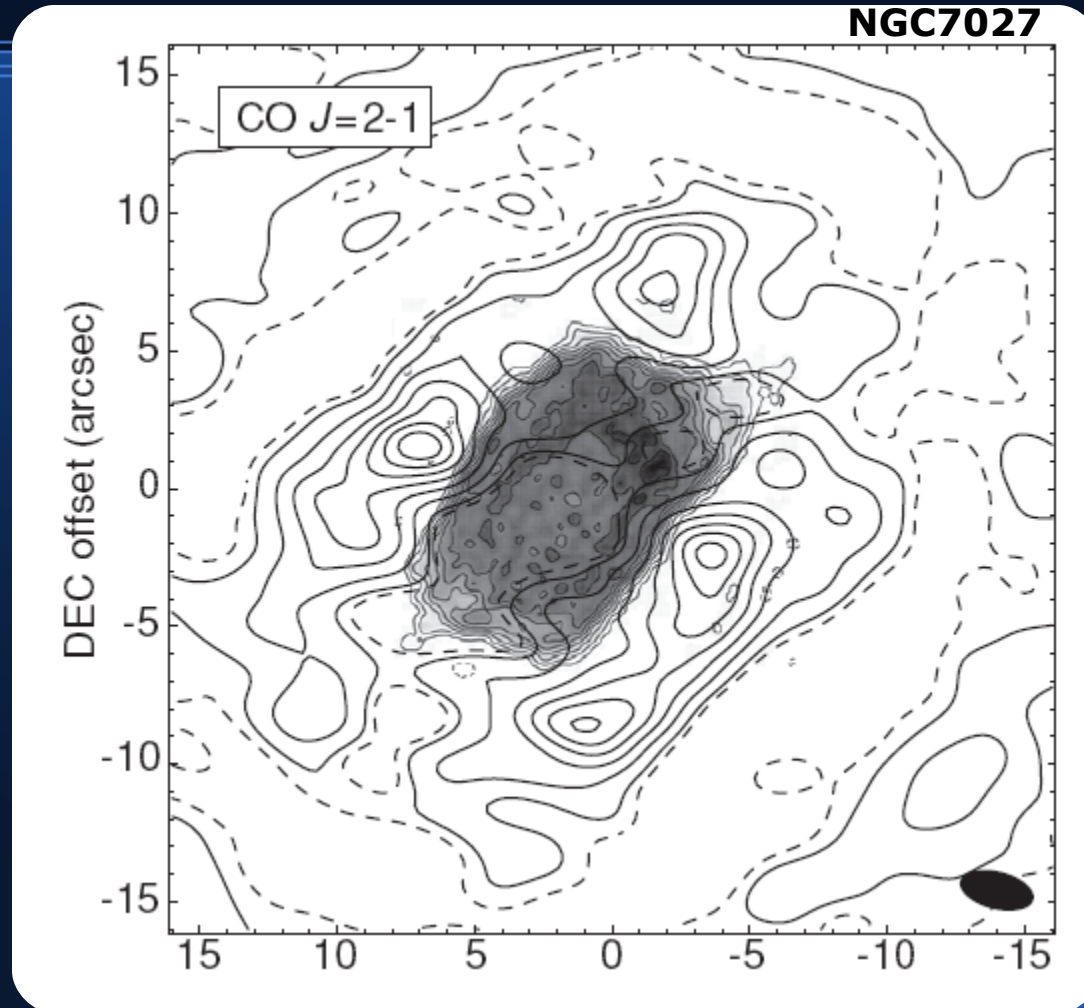


Flux Calibrators: Radio Stars

Pardo et al. (2009)

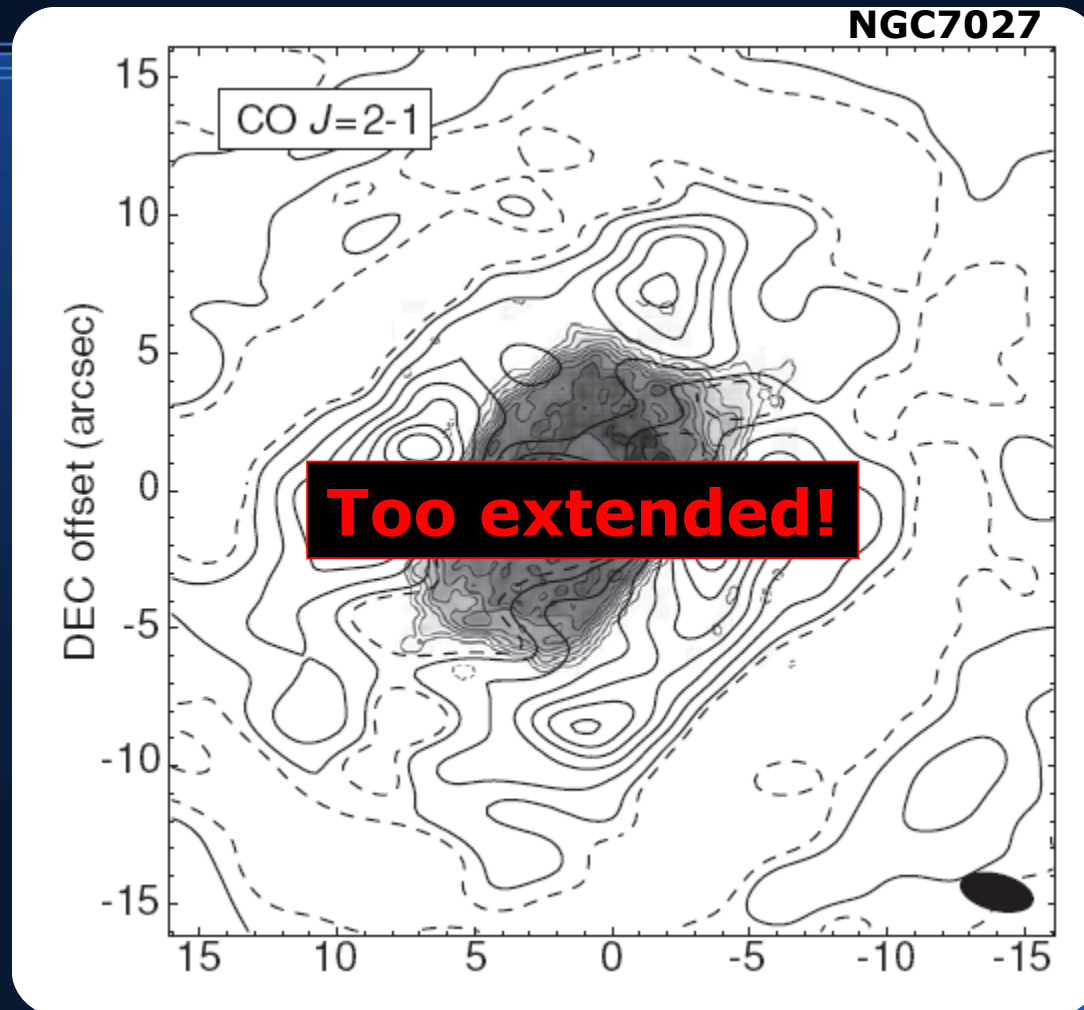


Flux Calibrators: Radio Stars



Nakashima et al. (2010)

Flux Calibrators: Radio Stars



Nakashima et al. (2010)

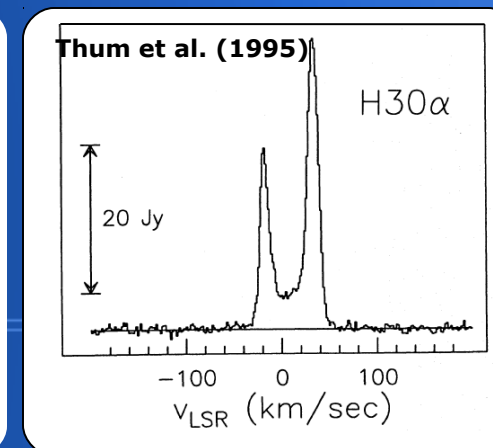
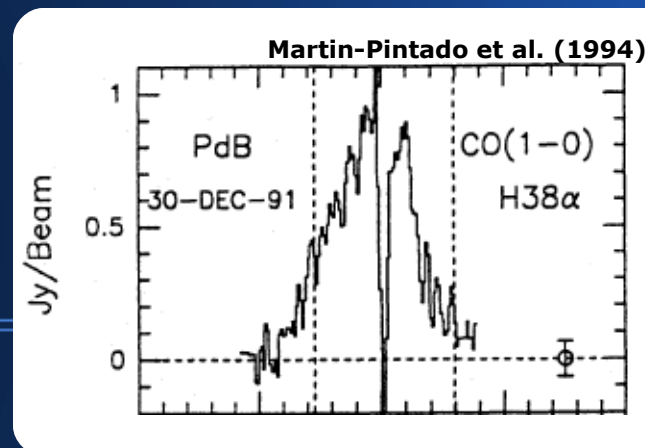
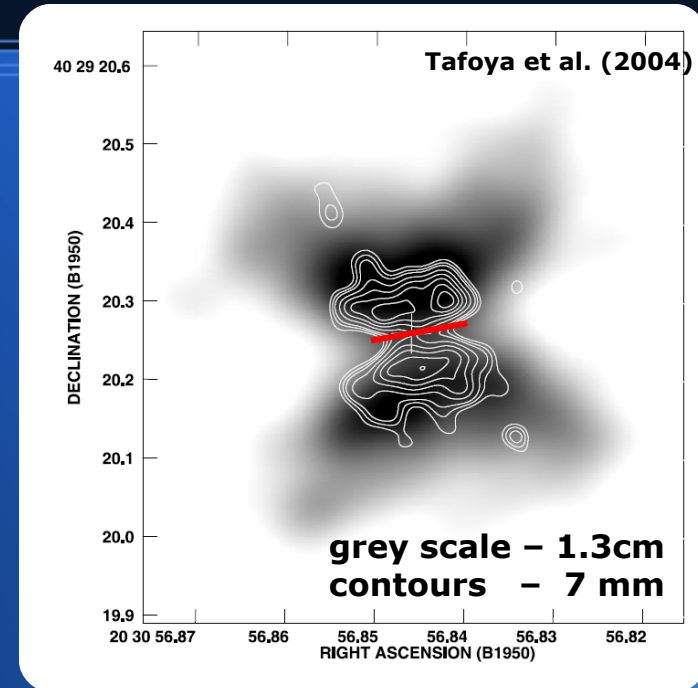
Radio bright stars:

- MWC349
- ~~CRL618~~
- ~~W3OH~~
- ~~NGC7072~~
- ~~NGC7538~~
- ~~K3-50A~~

Flux Calibrators: MWC349

Some facts:

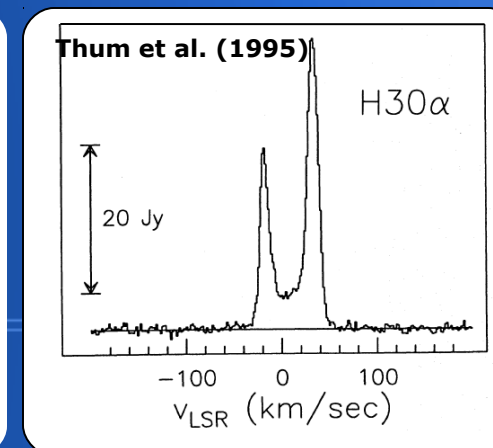
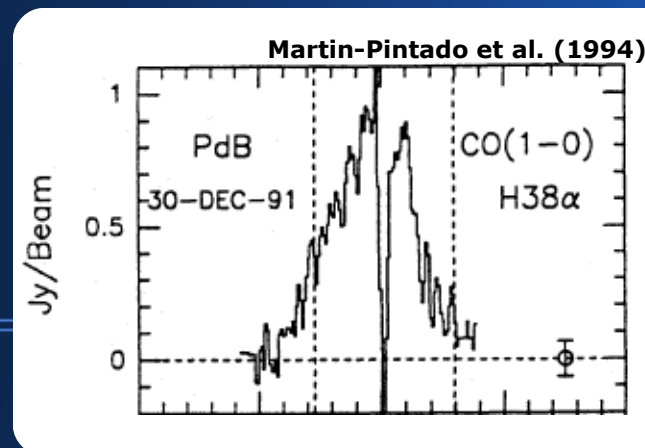
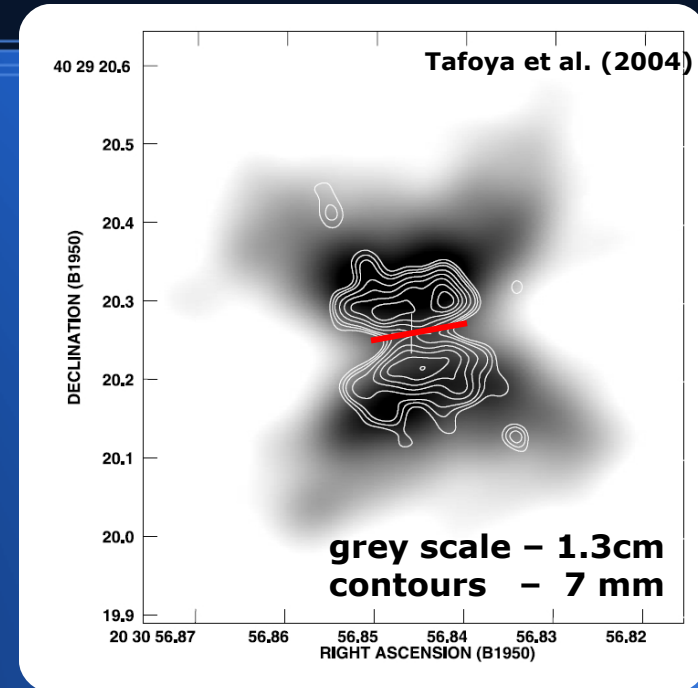
- binary stellar system:
MWC349A (Be) & MWC349B (B0 type III)
- the two stars are separated by $2.4'' \pm 0.1''$ and possibly interact
- MWC349A the brightest radio continuum star
- radio continuum produced by "ionised bipolar flow that photoevaporates from the surface of a neutral Keplerian disk"
- size of flow decreases with frequency
- strong but highly variable hydrogen maser emission (RRLs) from the near-edge-on disk ($\sim 0.065'' = 80\text{AU}@1.2\text{kpc}$)
- at declination of $>40\text{deg}$
-> visible for $\sim 13\text{h}$ per day



Flux Calibrators: MWC349

Some facts:

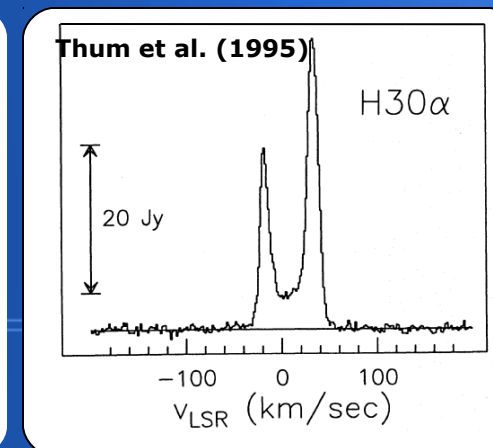
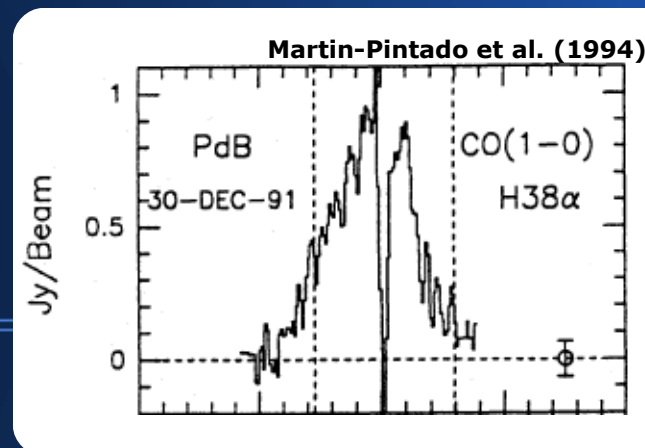
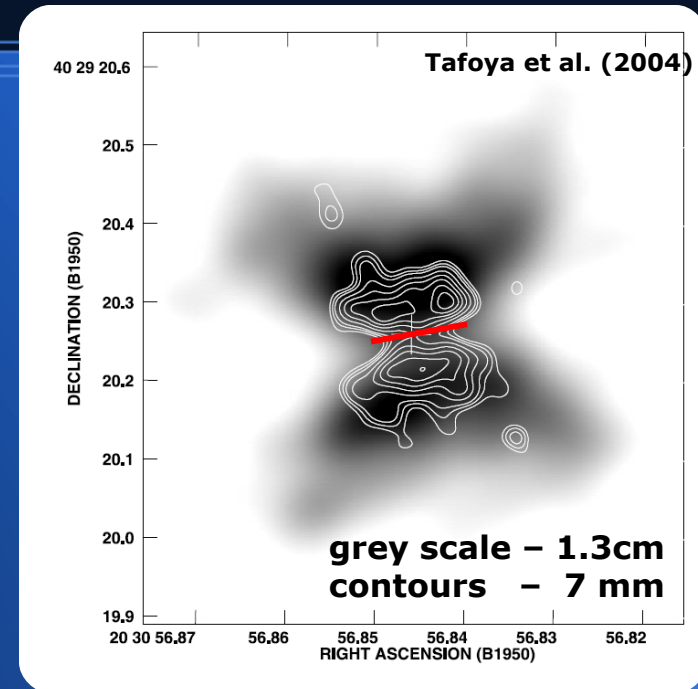
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Some facts:

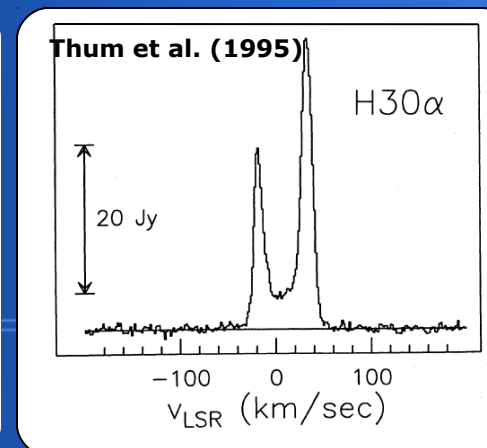
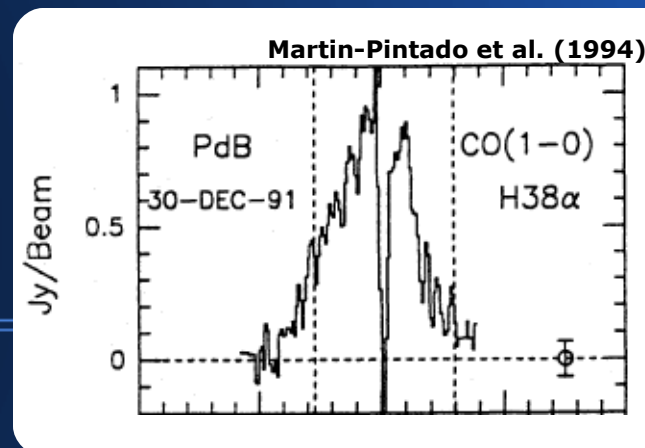
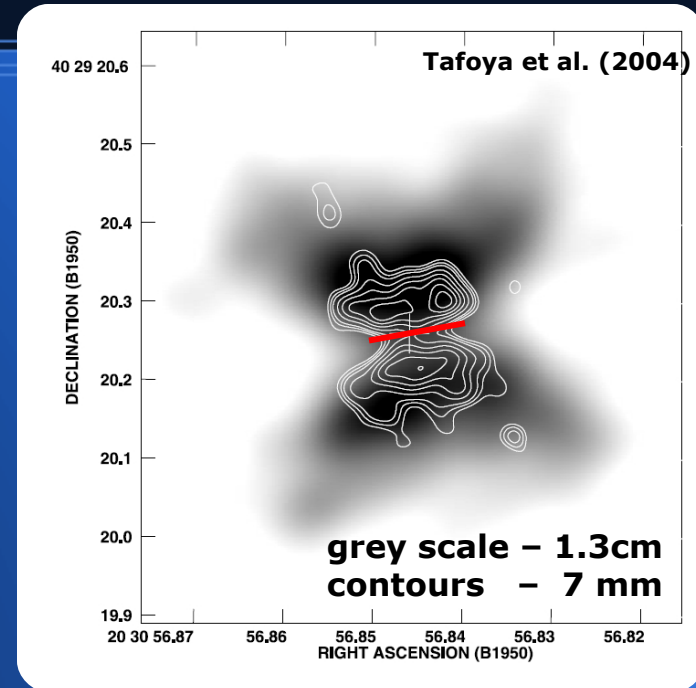
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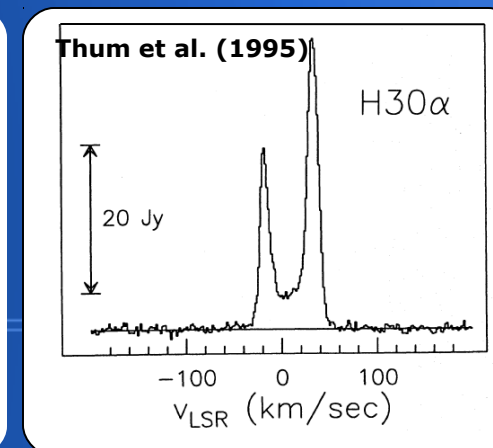
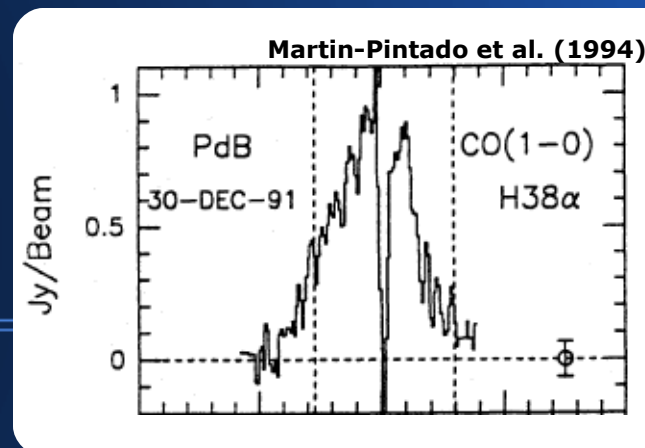
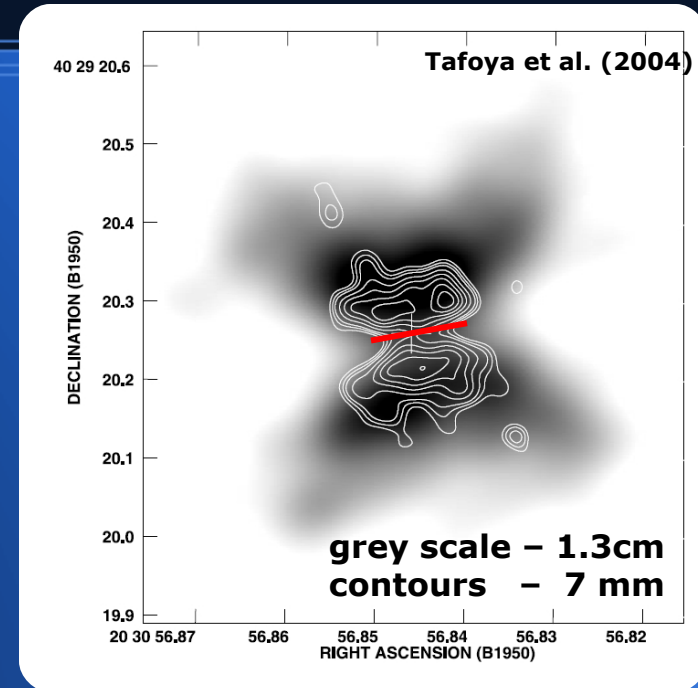
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Flux Calibrators: MWC349

Some facts:

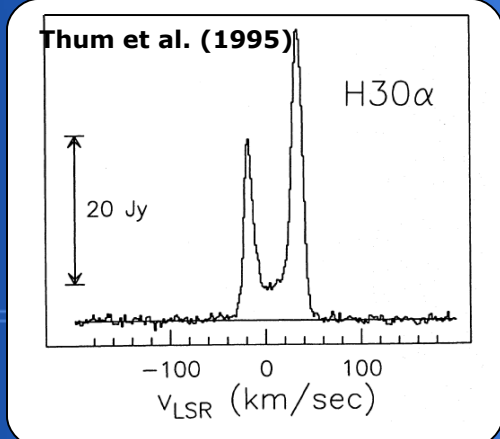
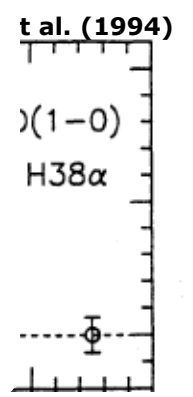
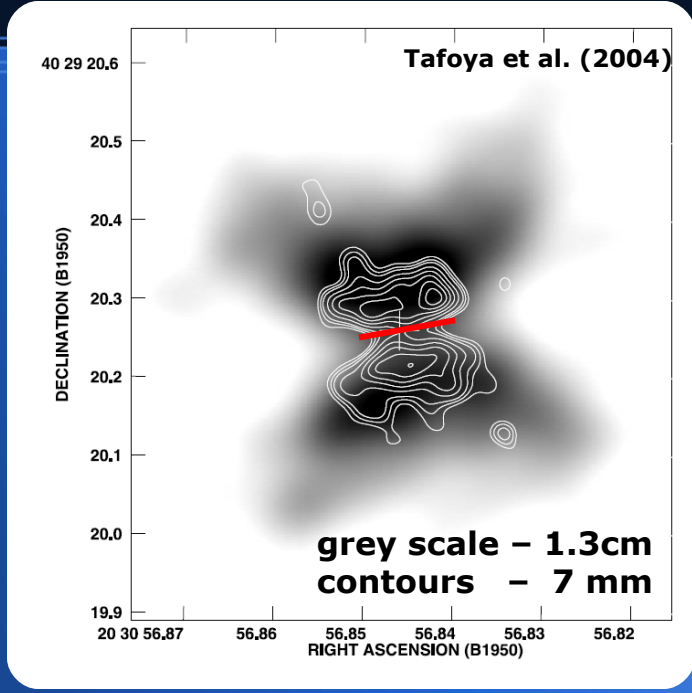
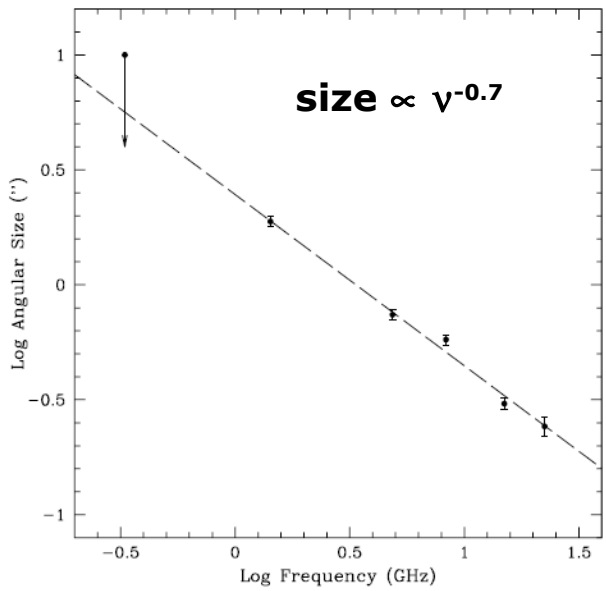
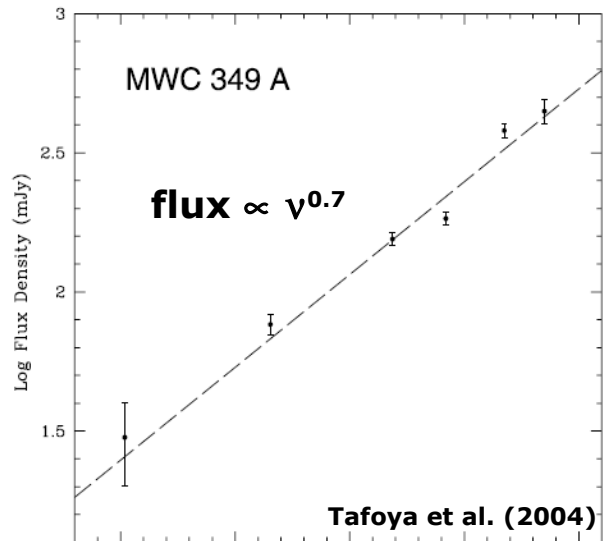
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Flux Calibrators: MWC349

Some facts:

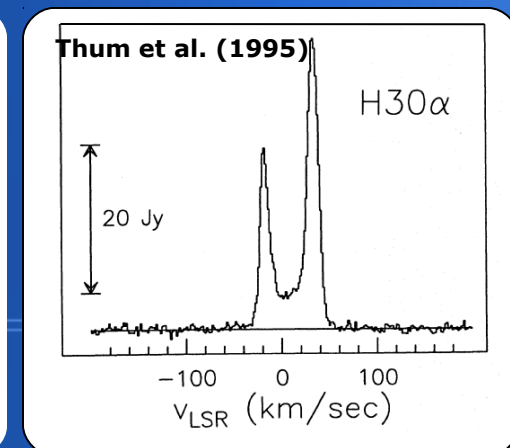
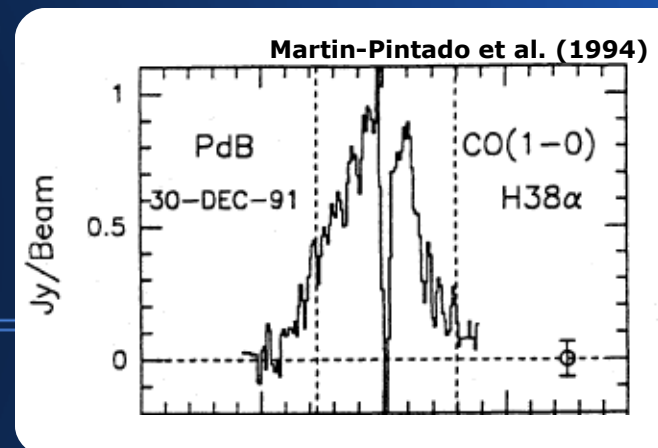
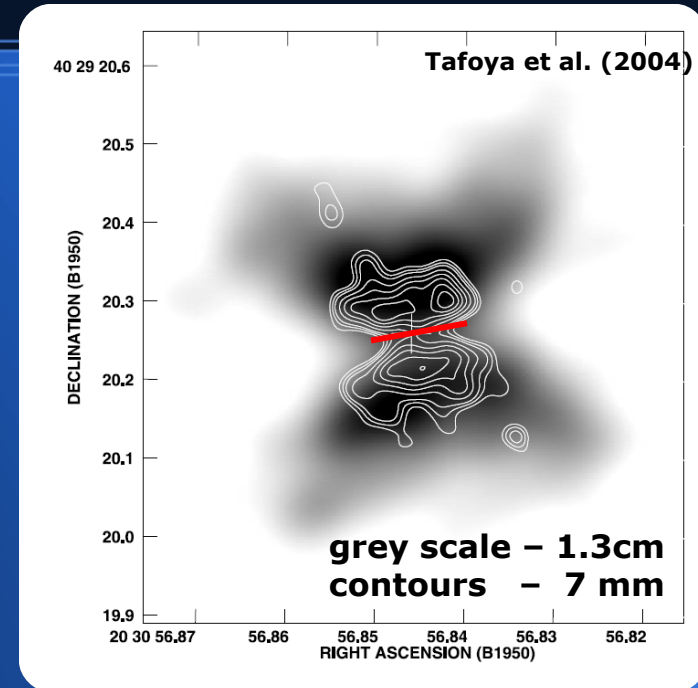
- binary stellar system MWC349A (Be) & MWC349B
- the two stars are seen to be possibly interact
- MWC349A the bright star
- radio continuum produced by flow that photoevaporates
- size of flow decreases with distance of a neutral Keplerian disk
- strong but highly variable emission (RRLs) from the disk
- at declination of $>40^{\circ}$ -> visible for ~ 13 h per day



Flux Calibrators: MWC349

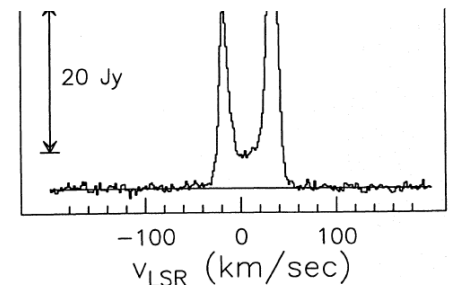
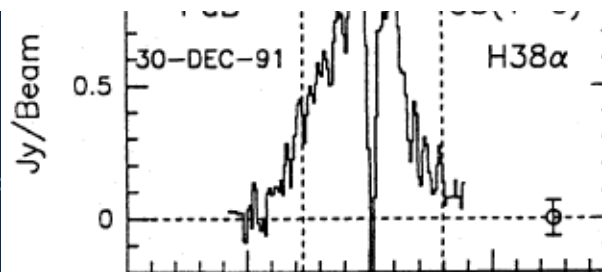
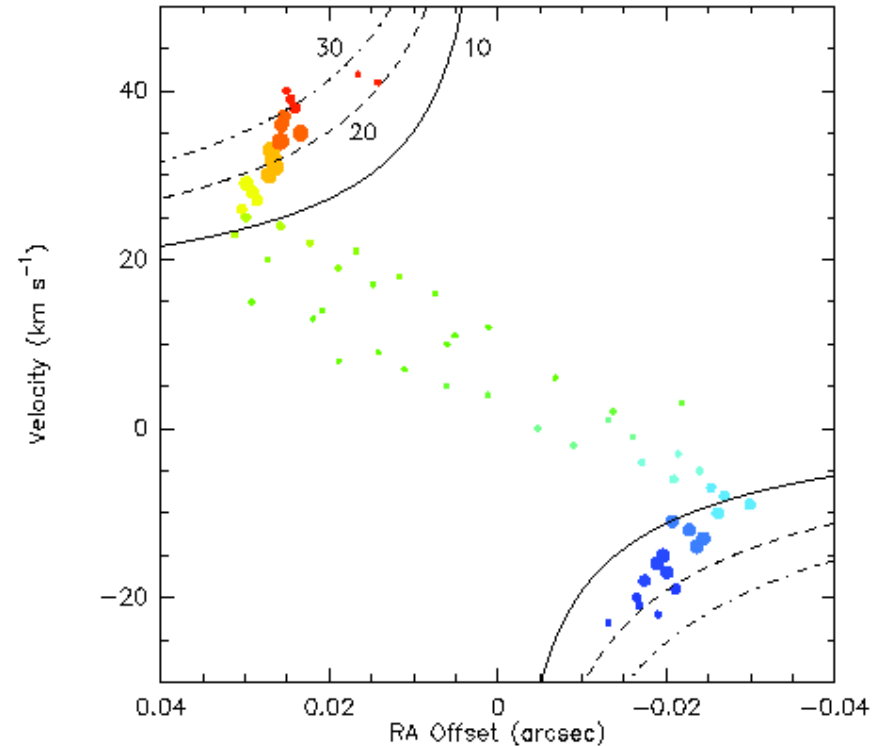
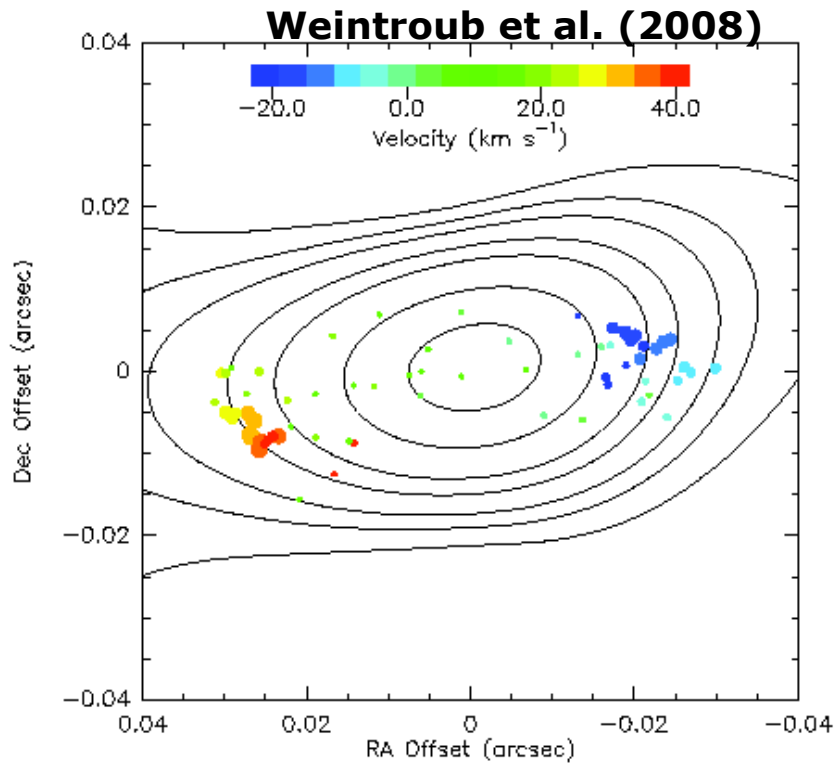
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Flux Calibrators: MWC349

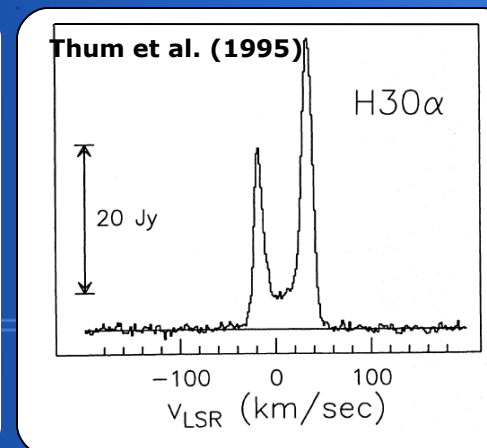
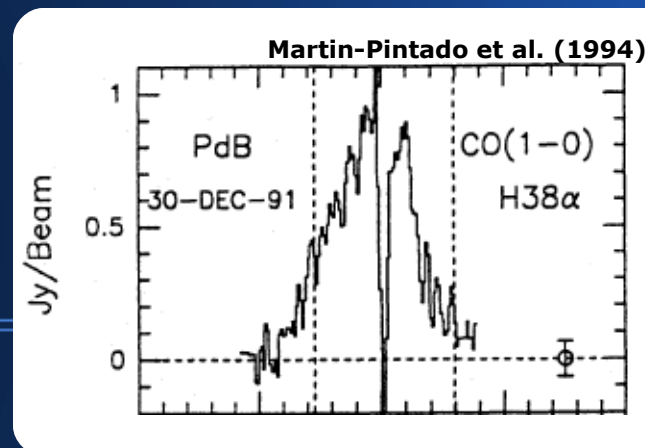
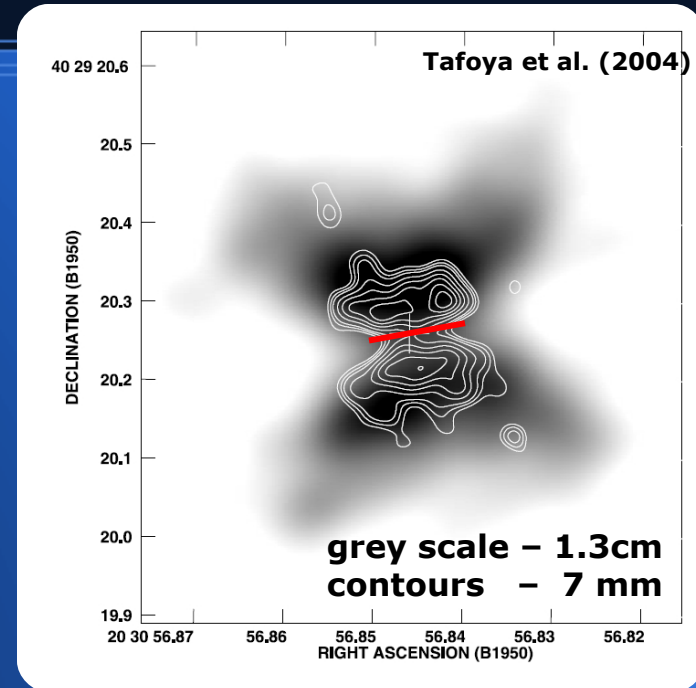
Some facts:



Flux Calibrators: MWC349

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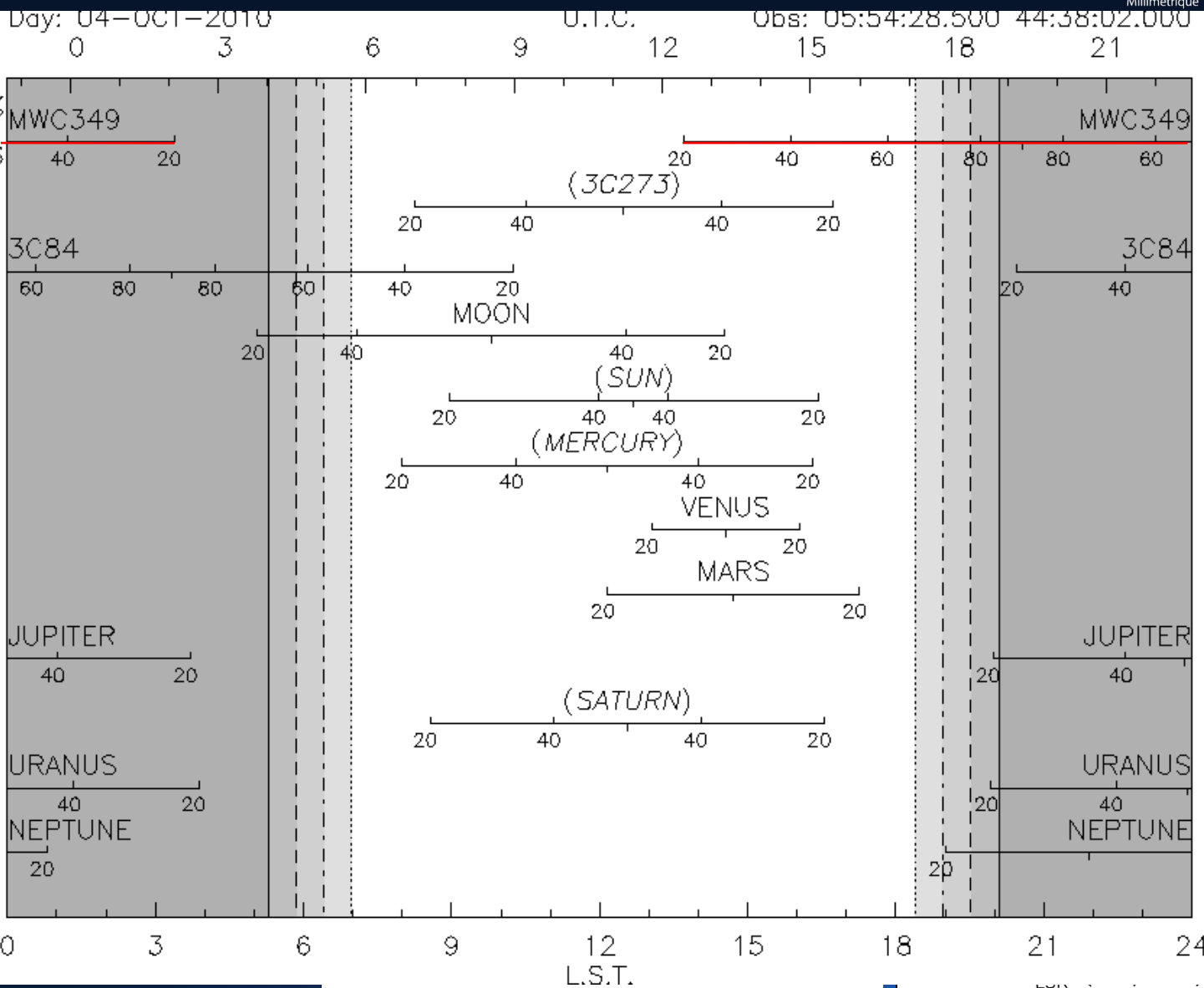
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- **at declination of $> 40^\circ$
 \Rightarrow visible for $\sim 13\text{h}$ per day at Bure**



Flux Calibrators: MWC349

Som

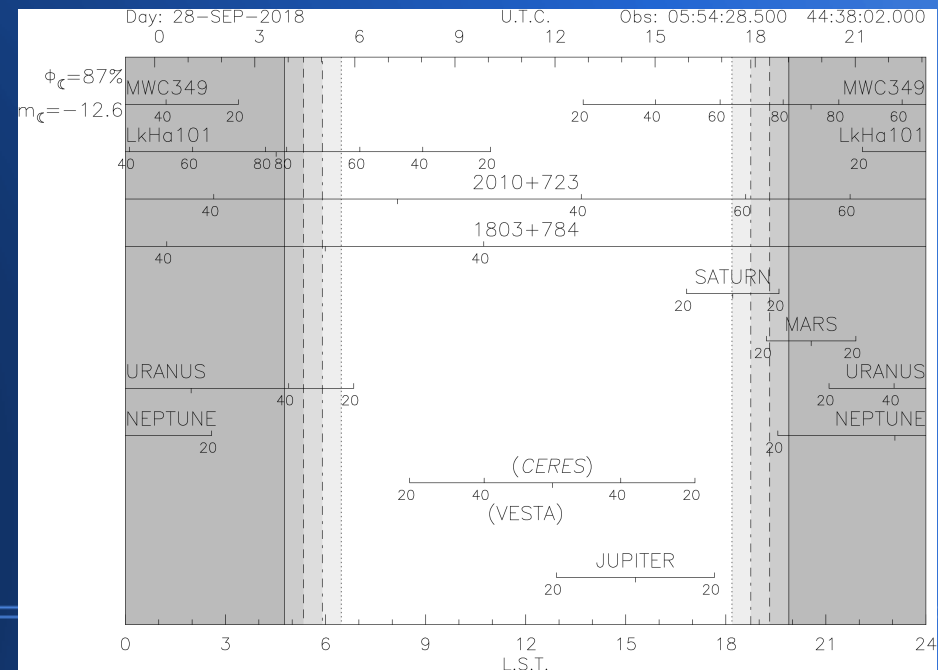
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Flux Calibrators: Radio Stars

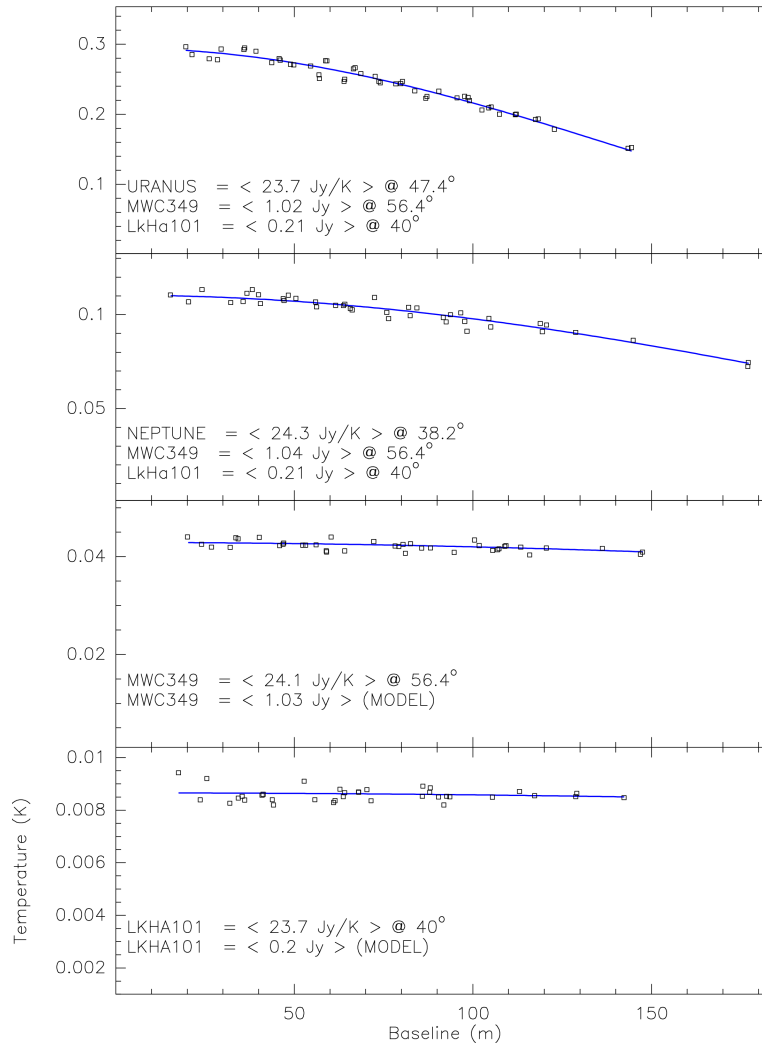
Reference radio bright stars:

- **MWC349**
- Since ~ 2013 we also use **LkHa101**
- **LkHa101** covers the complementary observable LST
- 24h LST coverage with FLUX reference



How to calibrate a calibrator?

25-SEP-2018 @ 81.3 GHz (LO1=89000 MHz)



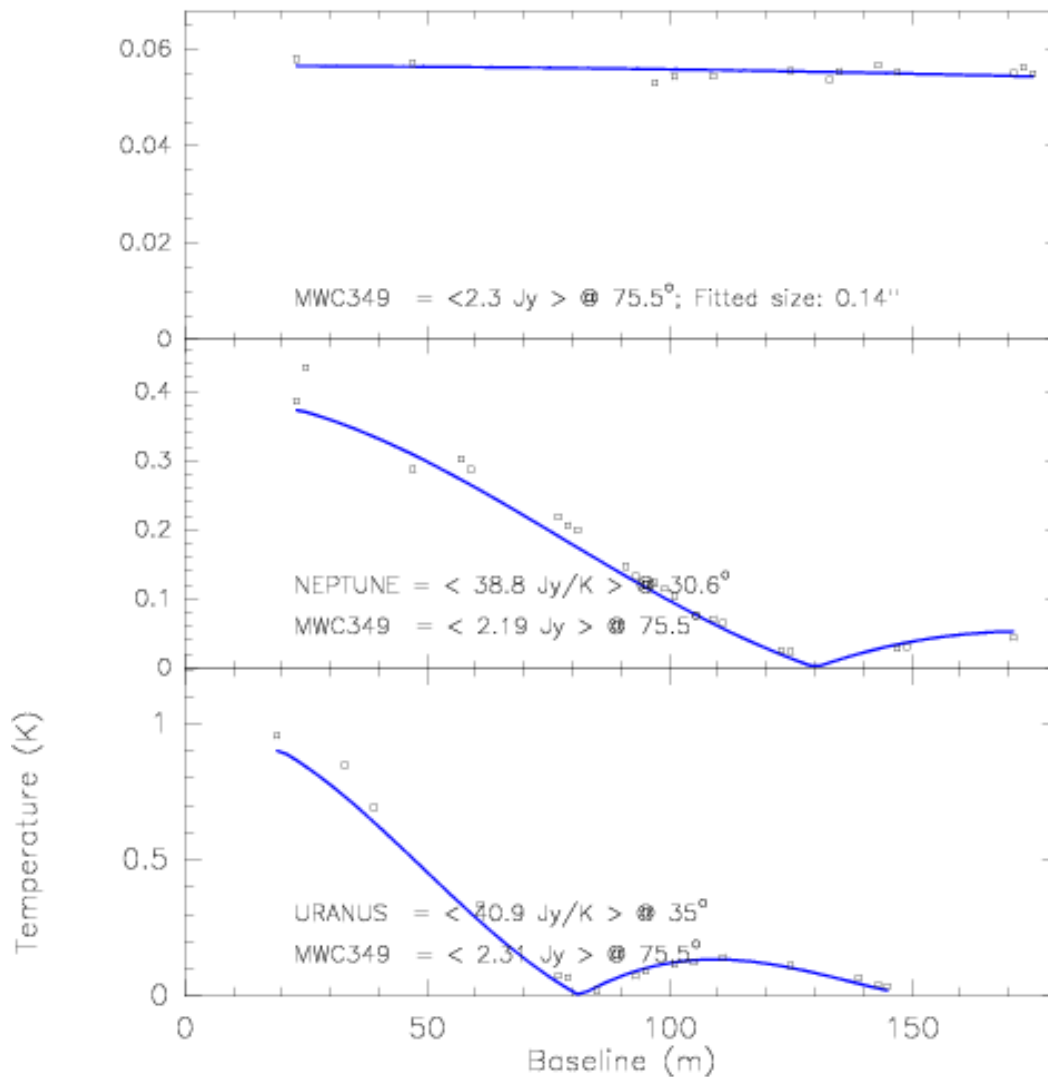
ANTENNA	3C454.3@61°	mwc349@56°
1	39.9 Jy/K	40 Jy/K
2	54.1 Jy/K	54.2 Jy/K
3	76.7 Jy/K	77 Jy/K
4	52.6 Jy/K	52.8 Jy/K
5	66 Jy/K	66.2 Jy/K
6	40.6 Jy/K	40.7 Jy/K
7	48.6 Jy/K	48.7 Jy/K
8	66.9 Jy/K	67.1 Jy/K
10	35.2 Jy/K	35.3 Jy/K

Weighted Av. 53.5 Jy/K 53.8 Jy/K

SOURCE	FLUX	MAJOR	MINOR	PA
URANUS	7	3.71	3.63	260
NEPTUNE	2.7	2.36	2.32	324
3C454.3	12.71	(URANUS)		
3C454.3	12.99	(NEPTUNE)		

How to calibrate a calibrator?

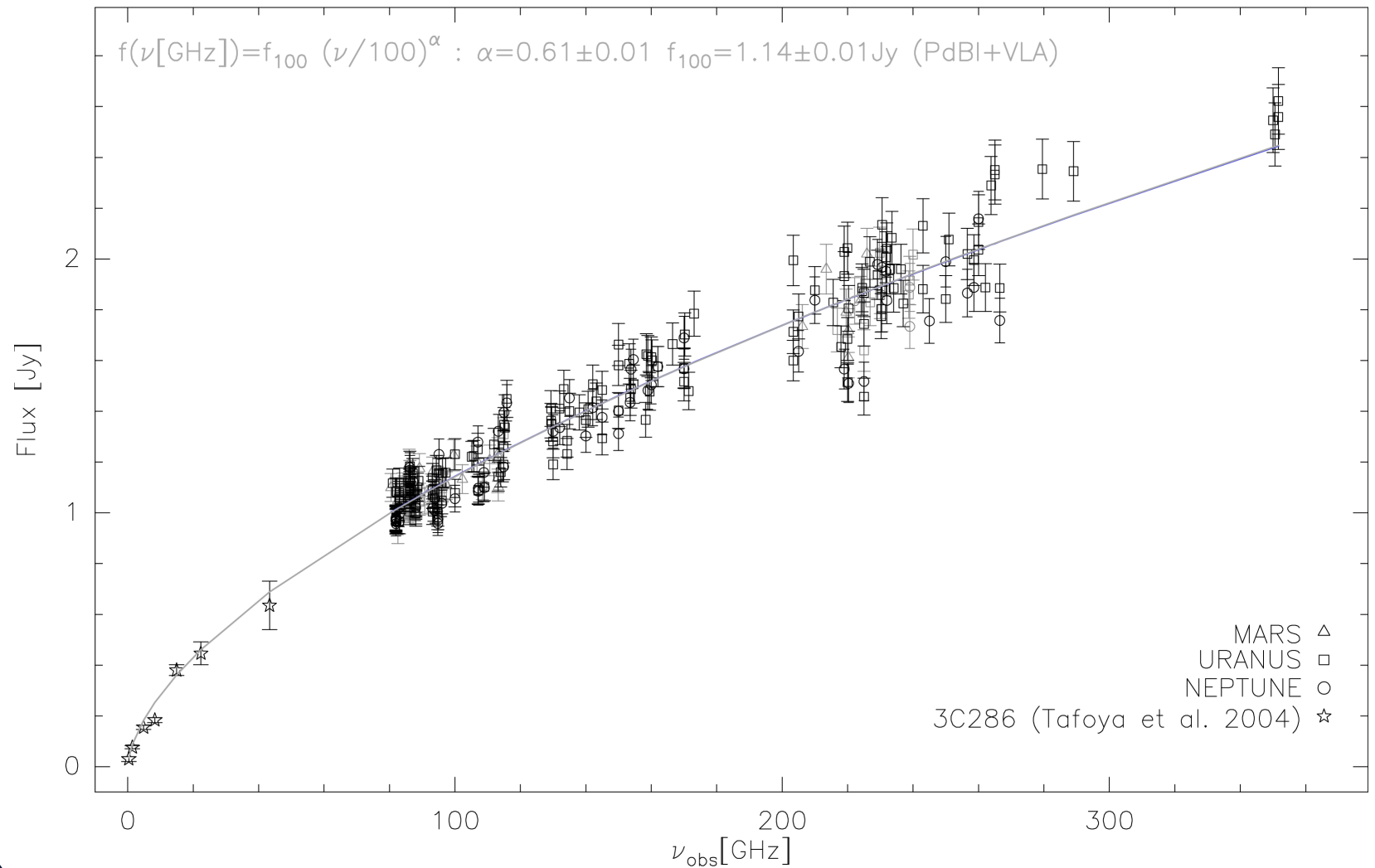
16-NOV-2008 @ 260 GHz (LO1REF=1888 MHz)



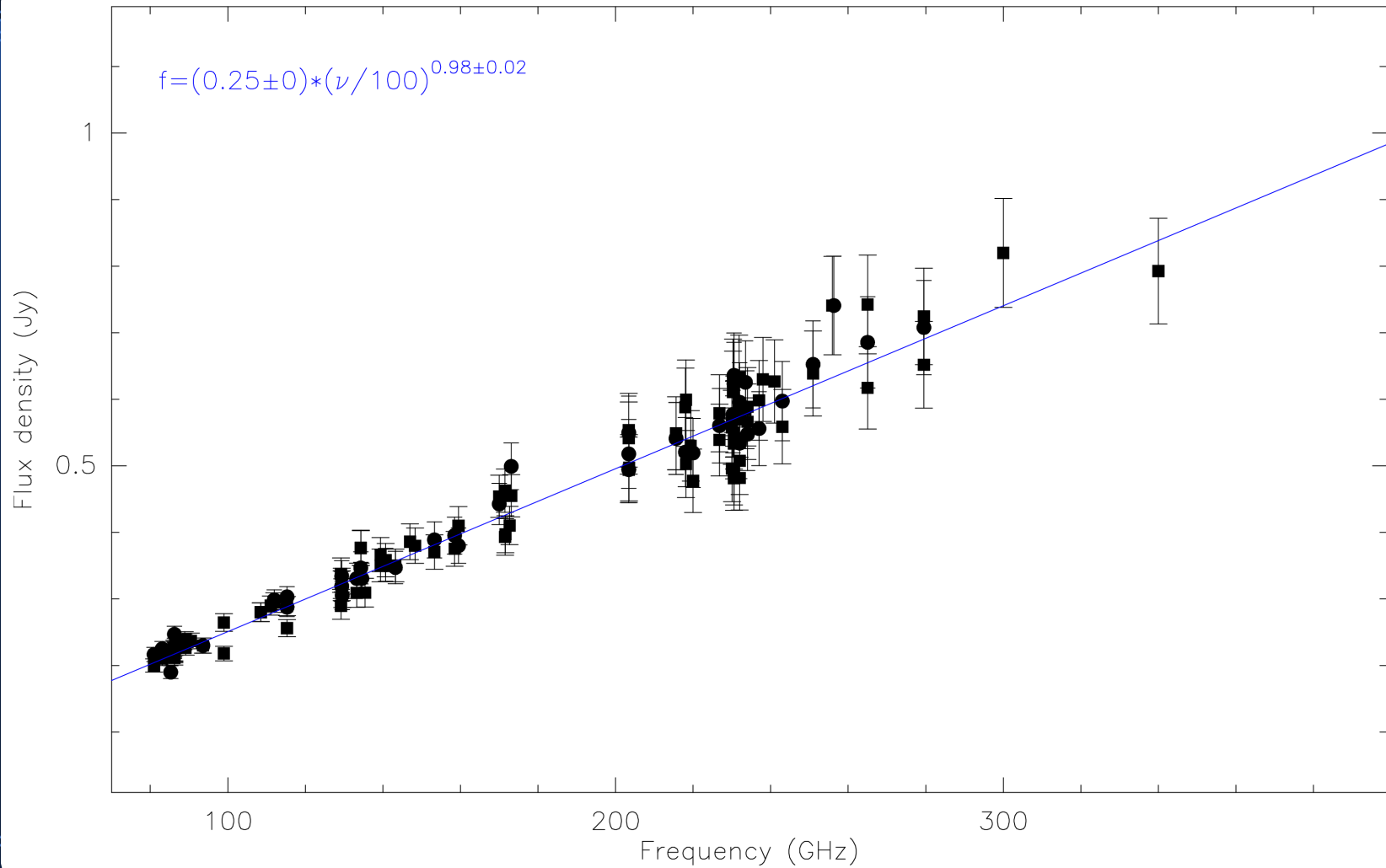
ANTENNA	3c454.3@52°	mwc349@75°
1	39.9 Jy/K	41.2 Jy/K
2	34.6 Jy/K	35.8 Jy/K
3	41.8 Jy/K	45.3 Jy/K
4	51.4 Jy/K	50.4 Jy/K
5	34.5 Jy/K	34.9 Jy/K
6	39.9 Jy/K	40.5 Jy/K
Weighted Av.	38 Jy/K	39.3 Jy/K

SOURCE	FLUX	MAJOR	MINOR	PA
URANUS	41.1	3.56	3.45	255
NEPTUNE	15.4	2.23	2.17	340
3c454.3	13.76	(Neptune)		
3c454.3	14.5	(Uranus)		

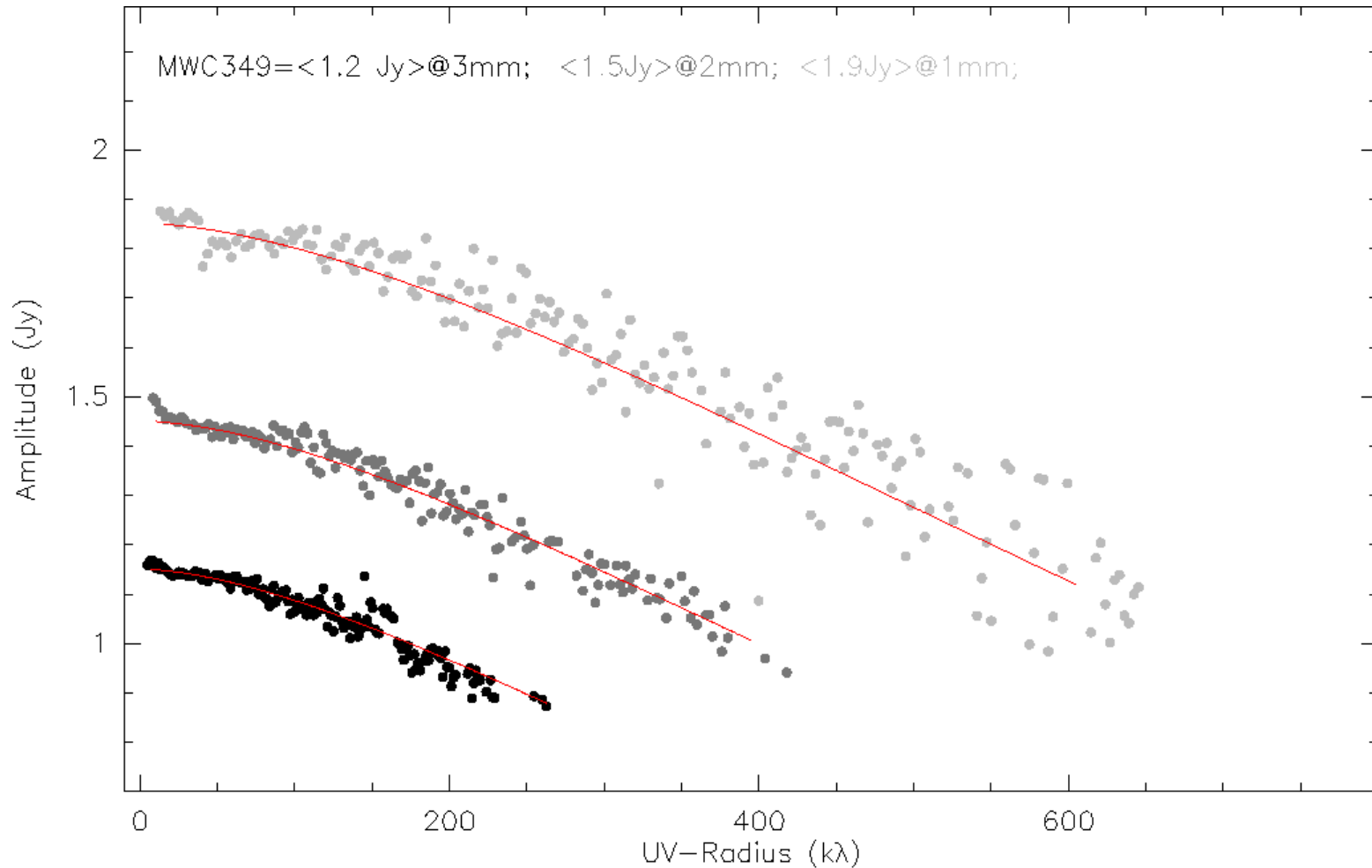
Flux of MWC349: SED



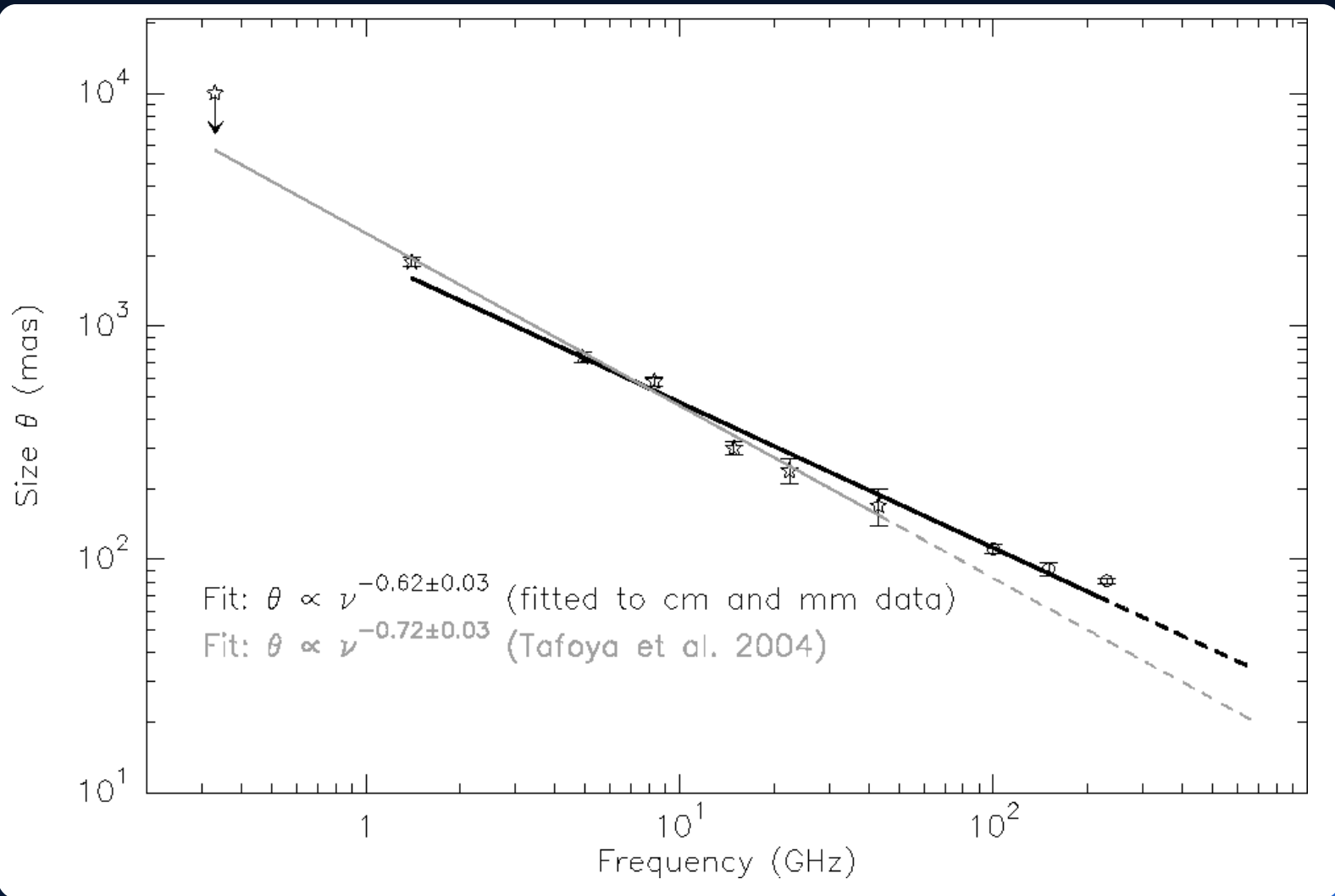
Flux of LkHa101: SED



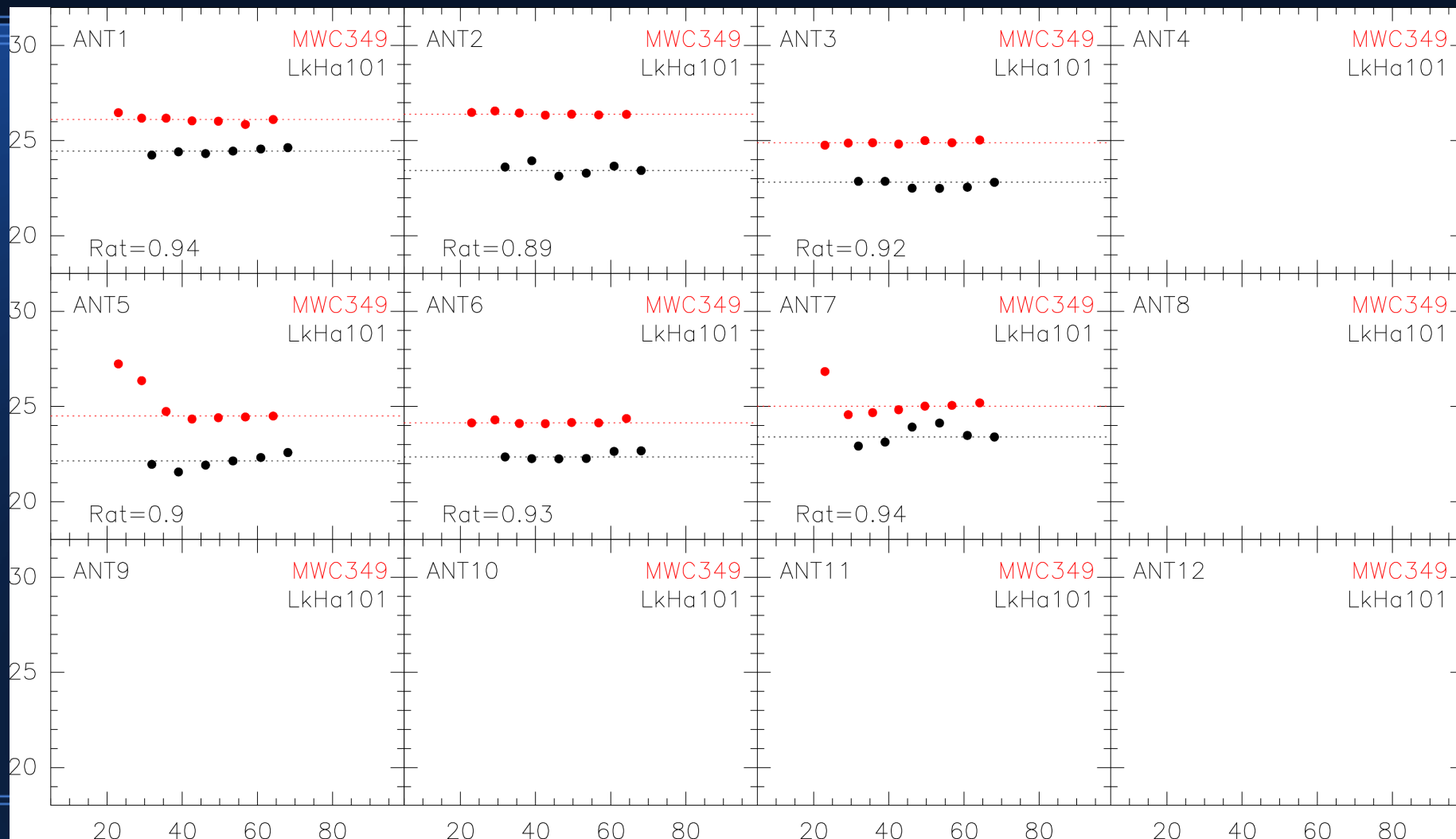
Size of MWC349



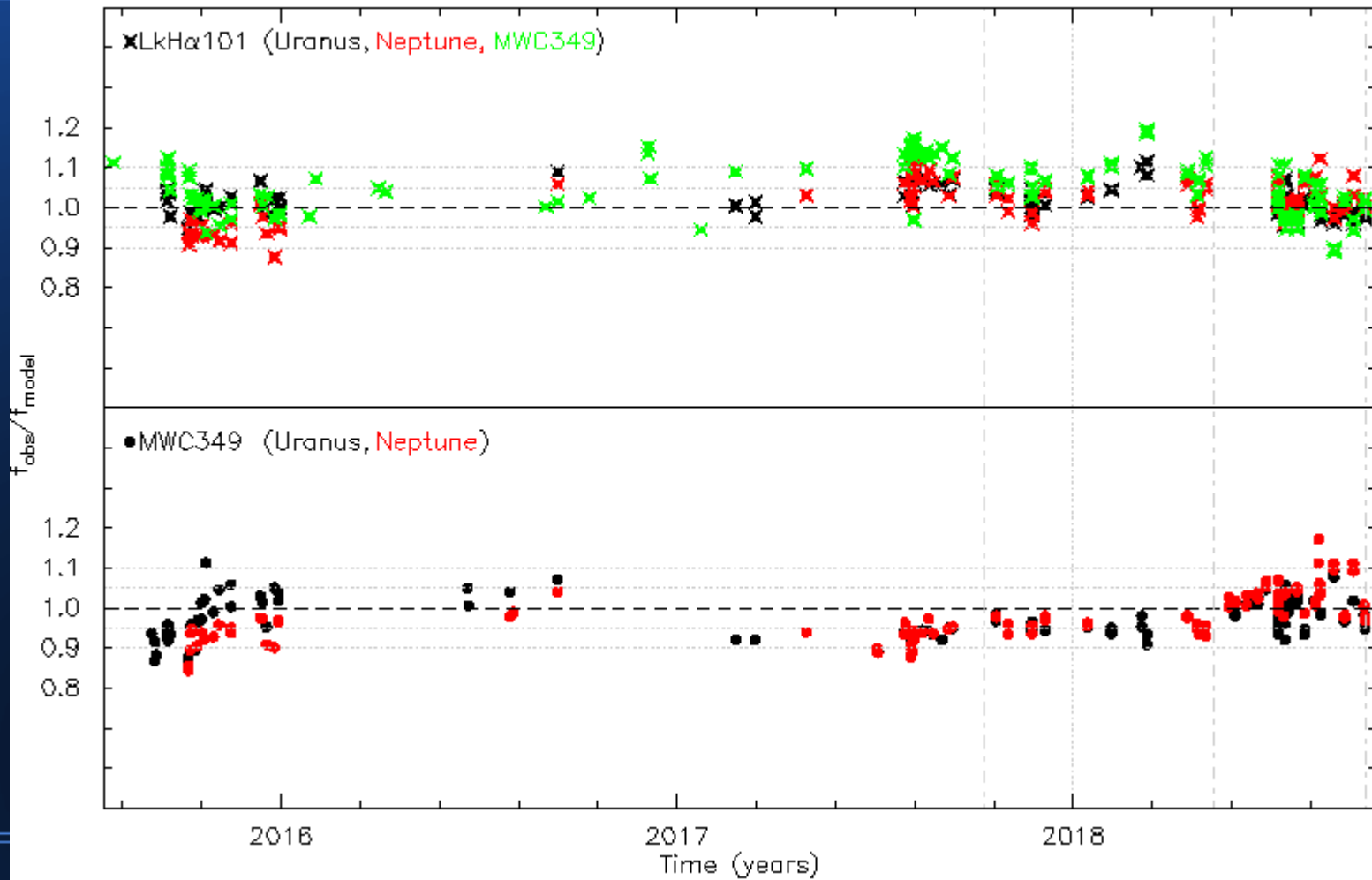
Size of MWC349



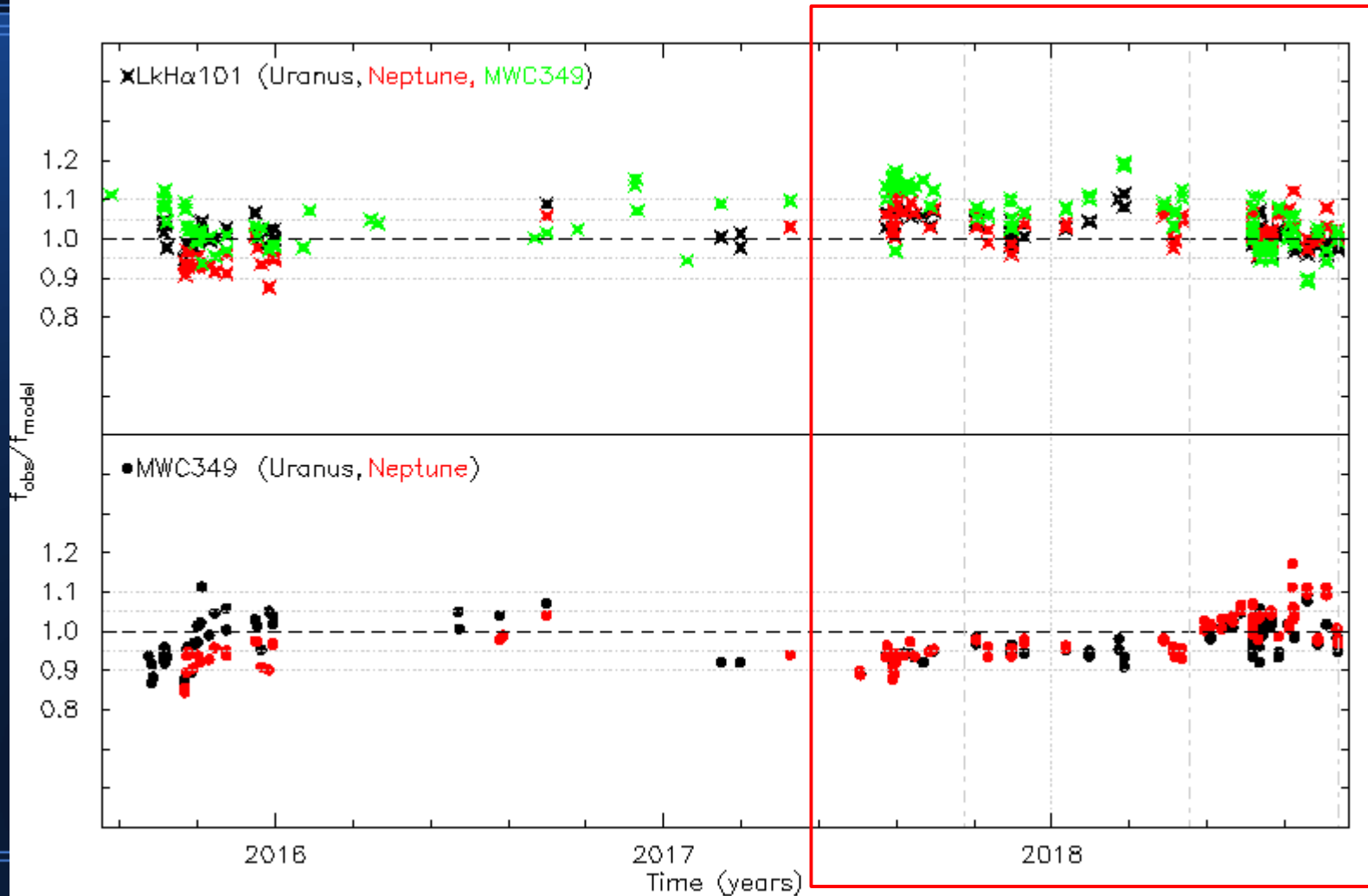
Flux of MWC349 & LkHa101: Variability



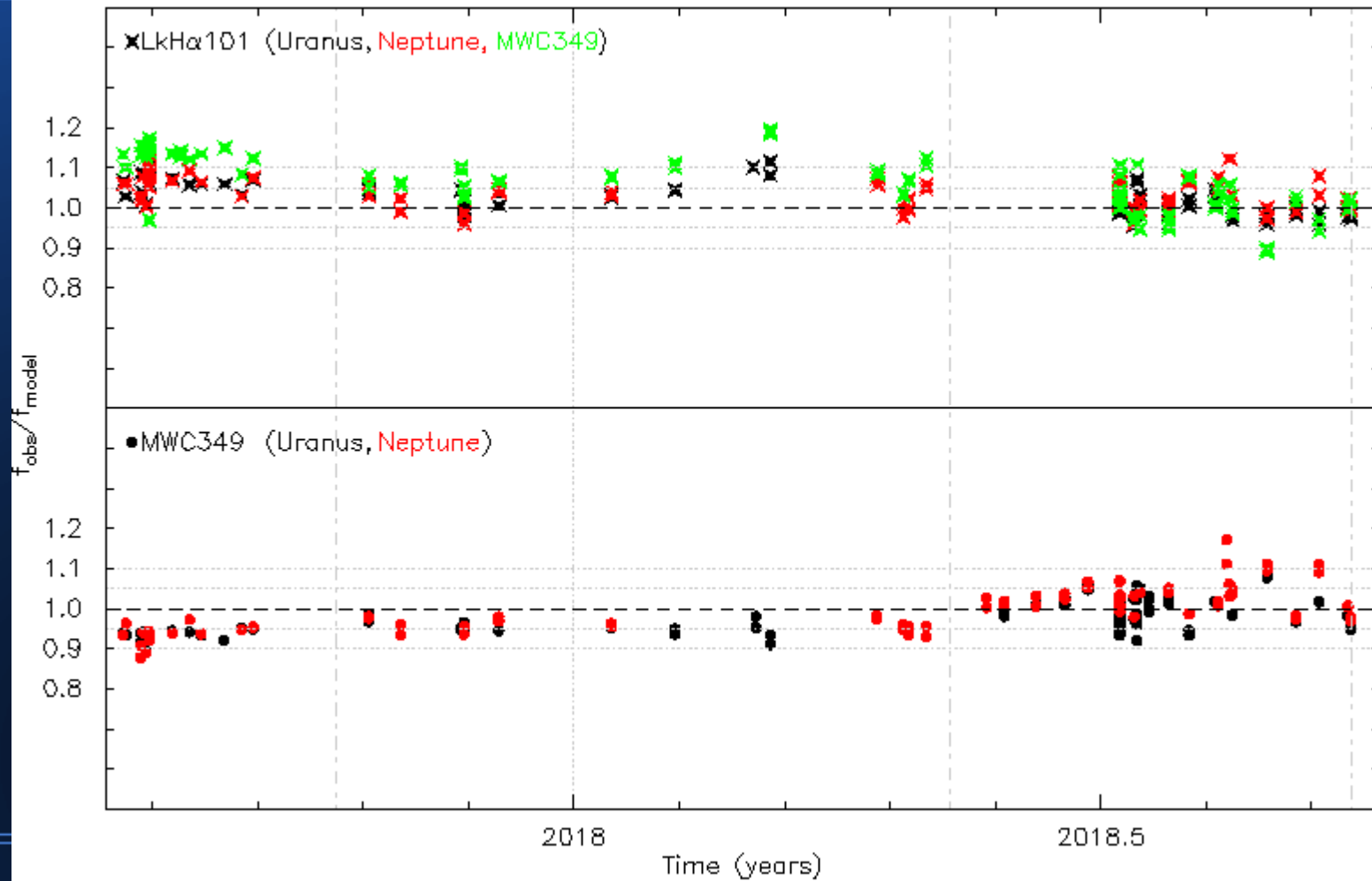
Flux of MWC349 & LkHa101: Variability



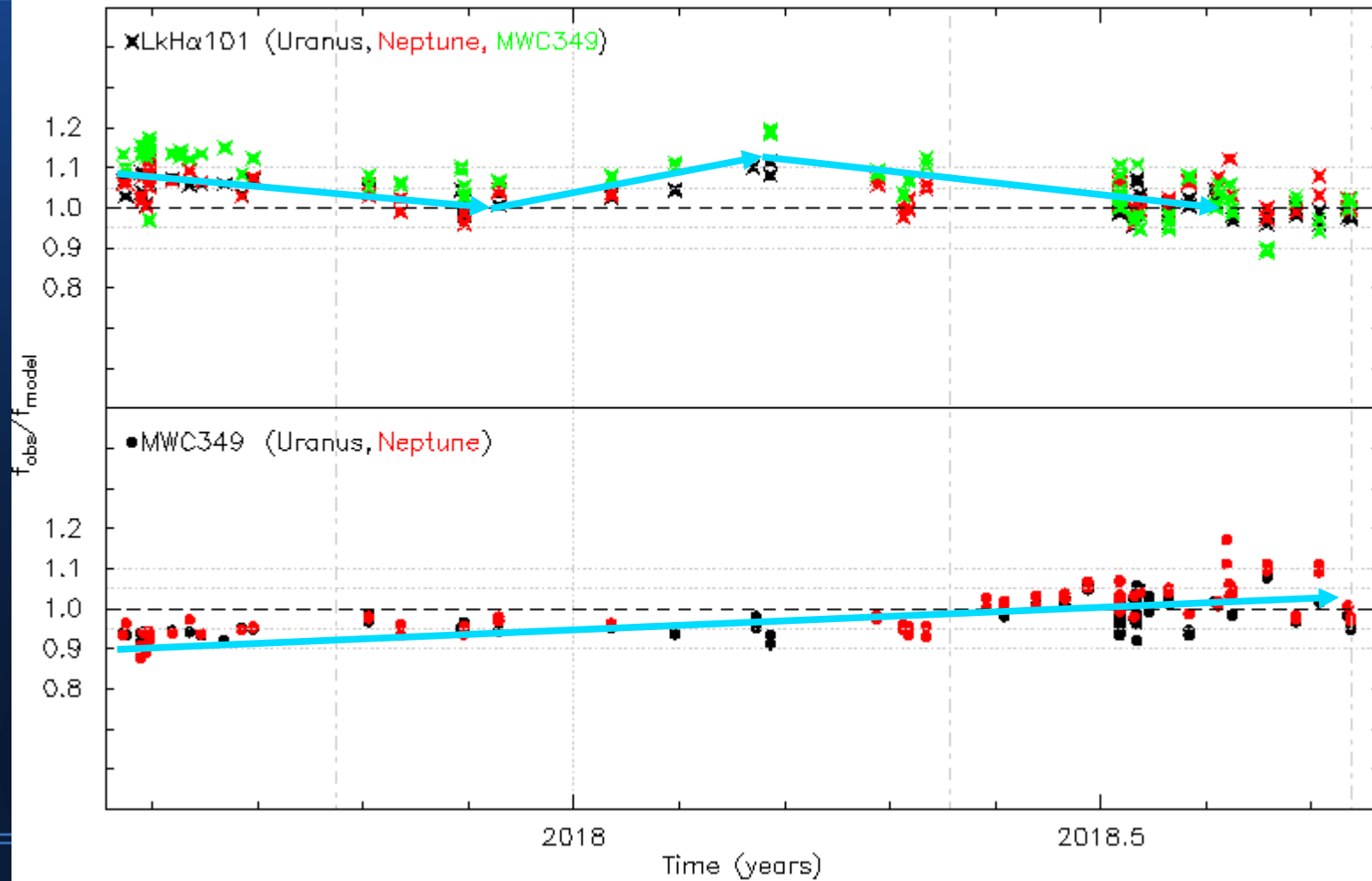
Flux of MWC349 & LkHa101: Variability



Flux of MWC349 & LkHa101: Variability



Flux of MWC349 & LkHa101: Variability



I. Why?

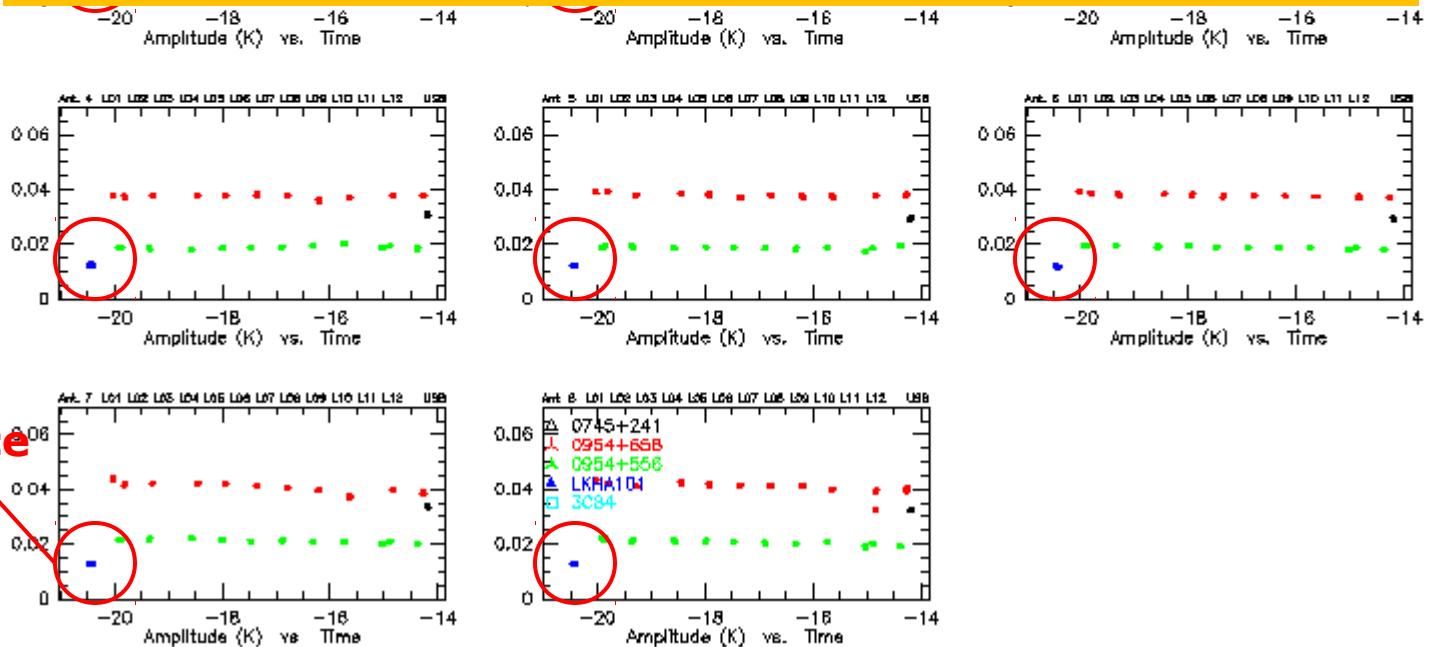
**II. Primary/Secondary Flux
Calibrators**

**III. Practical Tips to Calibrate
the Fluxes of your Sources**

Steps in flux calibration:

- 1) Fix the flux (Jy) of the reference calibrator
- 2) Estimate K/Jy factor (antenna efficiency)
- 3) Derive flux for other calibrators

Final representation = normalized amplitudes =
antenna efficiencies (Jy/K or K/Jy)

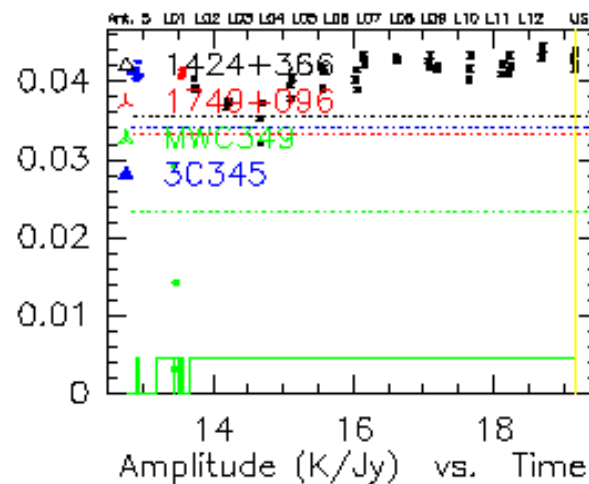
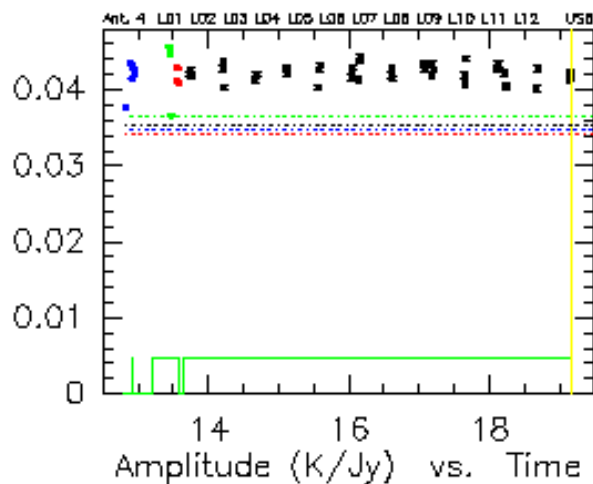
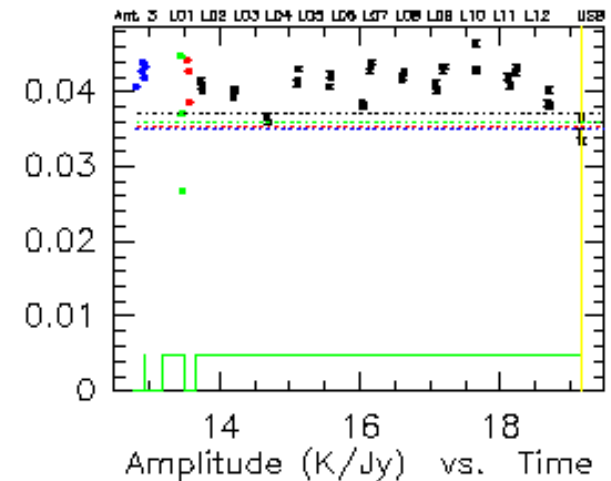
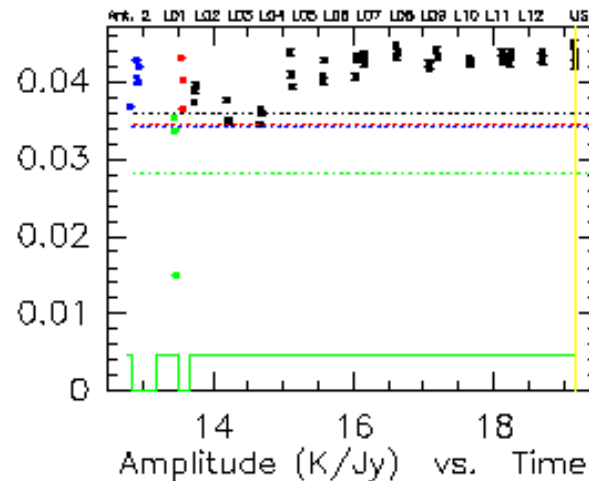
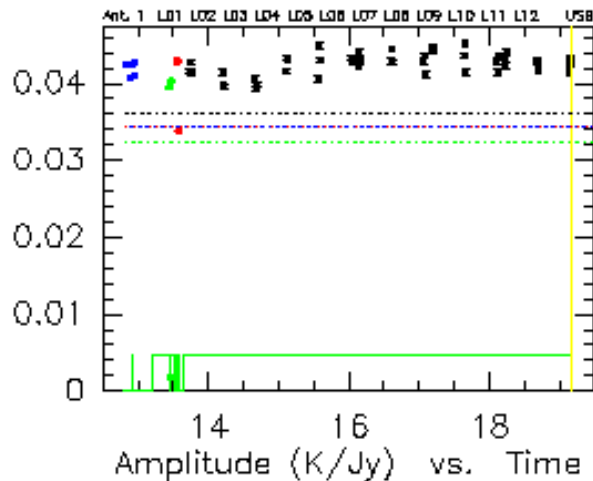


Flux
reference

Visual Output from FLUX calibration

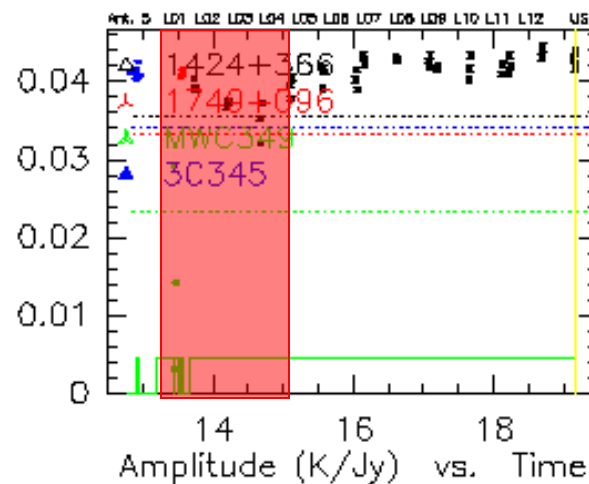
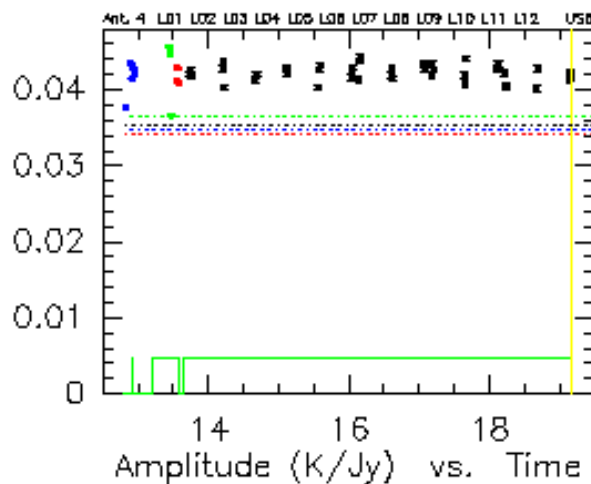
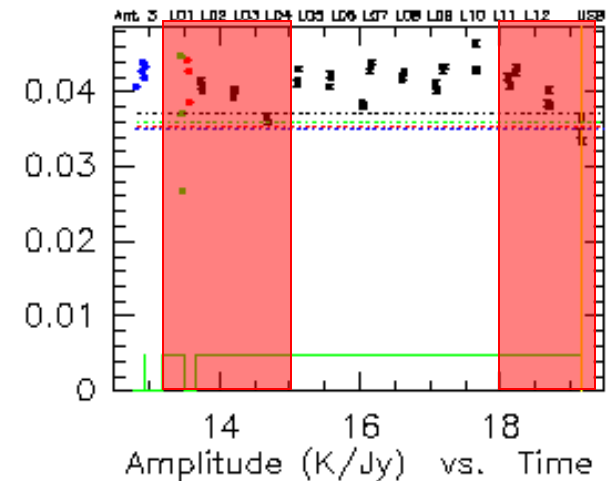
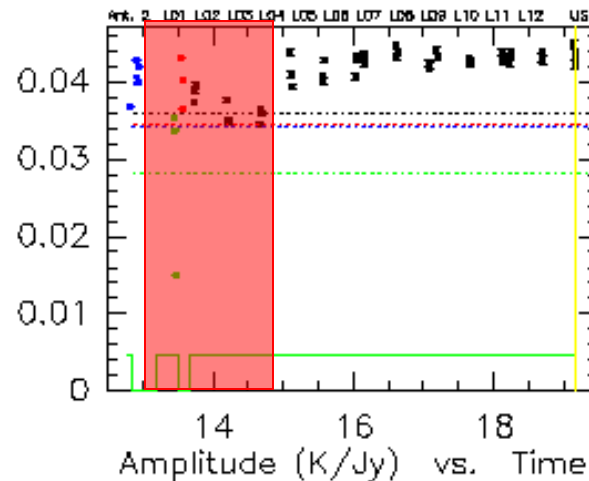
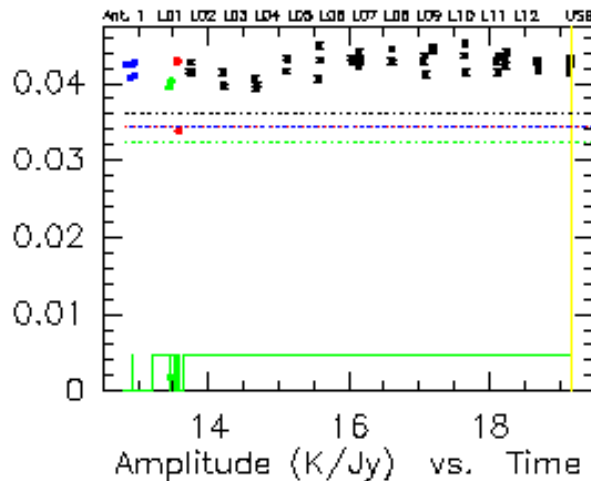


Visual Output from FLUX calibration



- **We derive the FLUX for each source**
- **Here normalized amplitudes = K/Jy = characteristic of each antenna (or antenna performance)**
- **If at some moment the performance/data are BAD and not representative – ignore that**

Visual Output from FLUX calibration



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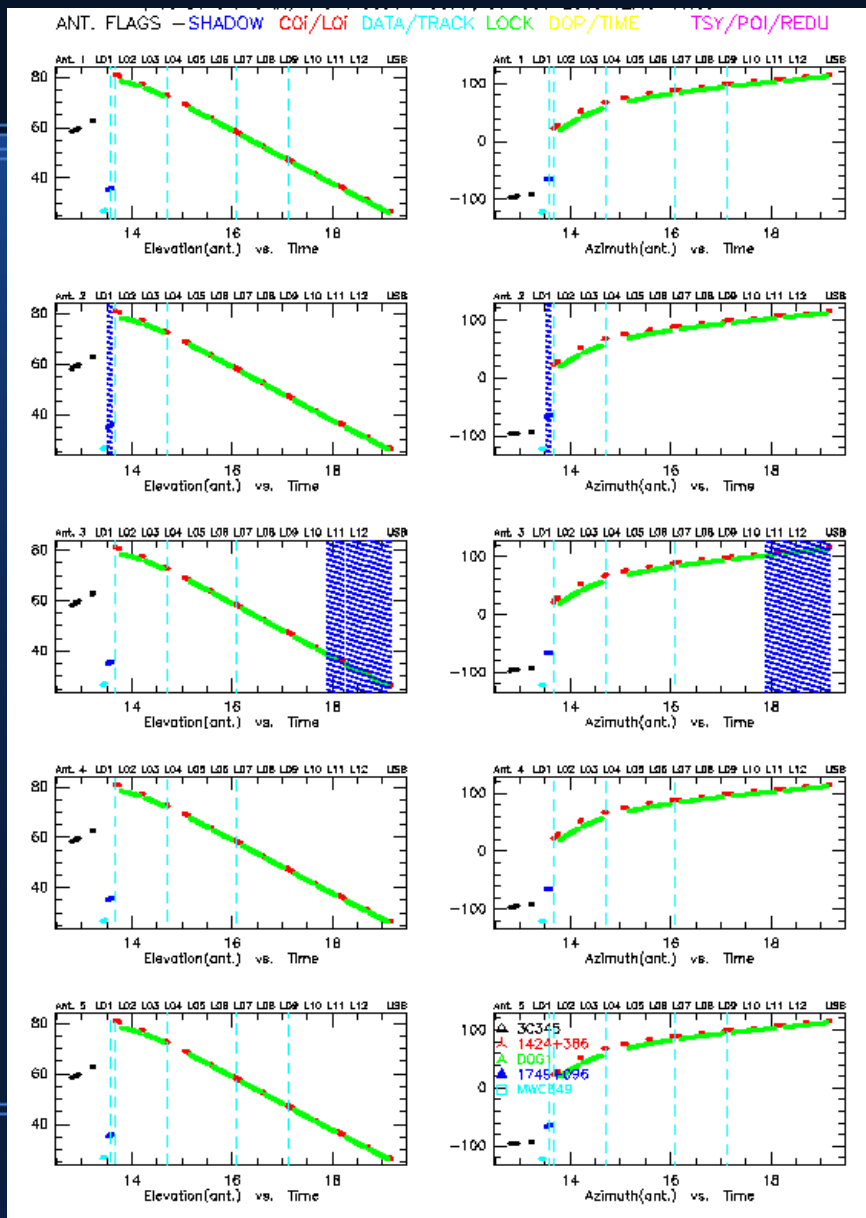
Which are the issues to consider?

Checklist:

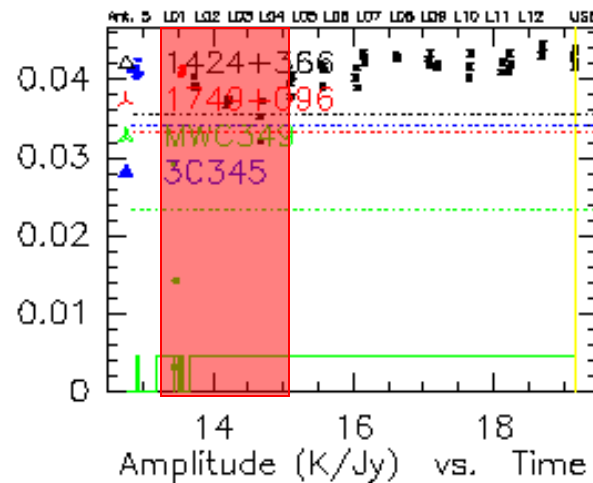
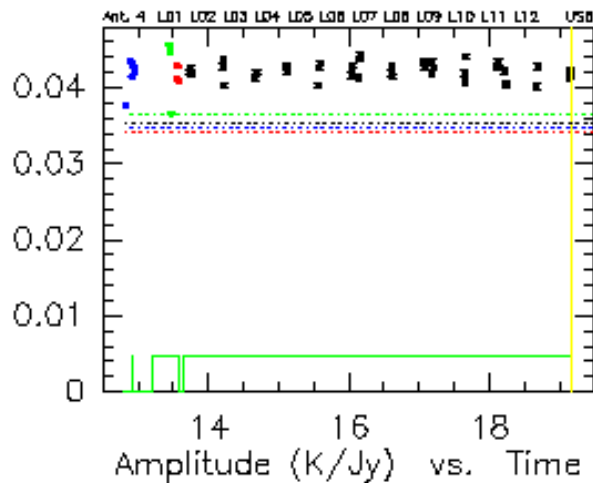
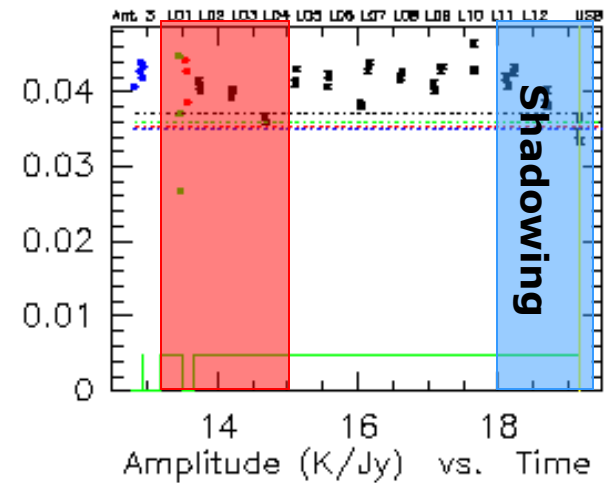
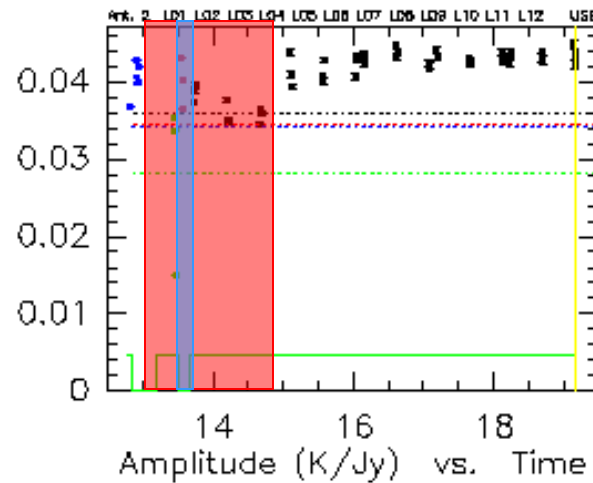
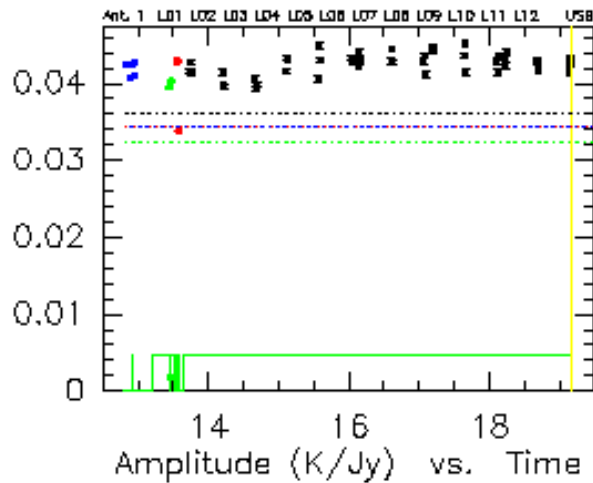
- **Antenna Shadowing**
- **Pointing/Focus Problems**
- **Tracking Problems**
- **Noisy data**
- **Has Flux Calibrator Lines?**
- **Is Flux Calibrator Extended?**
- **Check Elevation of your source**
- **Check whether source is polarised
(only important when using one polarisation)**
- **Do phases of different spectral windows
overlap?**

Practical Tips: Shadowing

First Look



Practical Tips: Shadowing



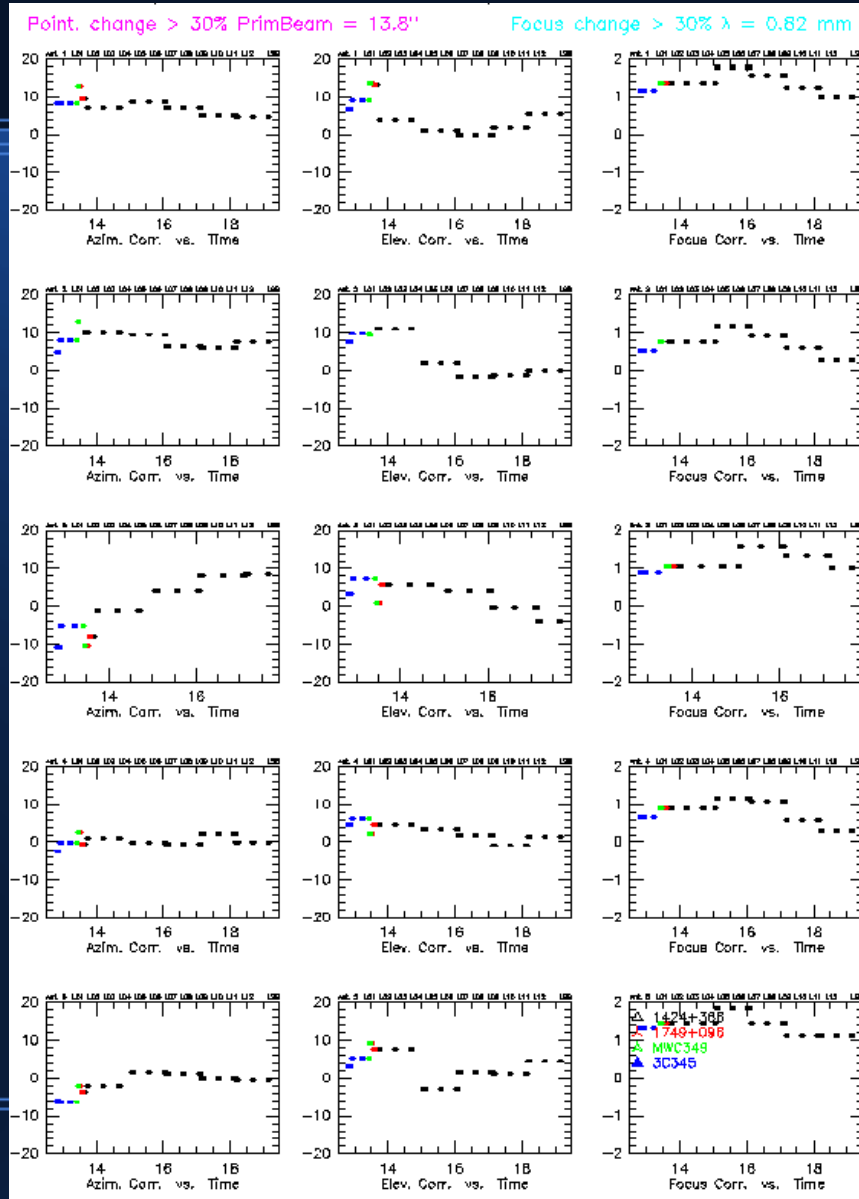
Which are the issues to consider?

Checklist:

- **Antenna Shadowing**
- **Pointing/Focus Problems**
- **Tracking Problems**
- **Noisy data**
- **Has Flux Calibrator Lines?**
- **Is Flux Calibrator Extended?**
- **Check Elevation of your source**
- **Check whether source is polarised
(only important when using one polarisation)**
- **Do phases of different spectral windows
overlap?**

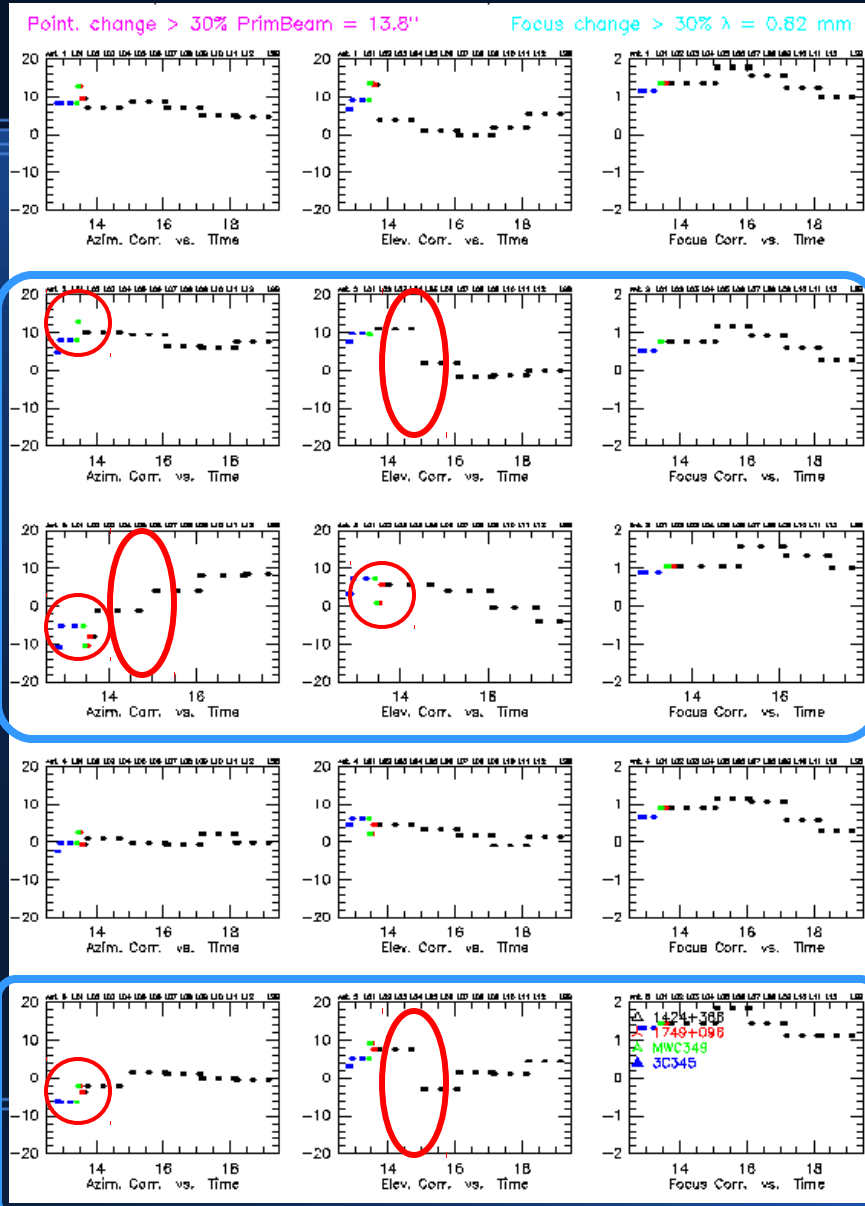
Practical Tips: Pointing/Focus

First Look

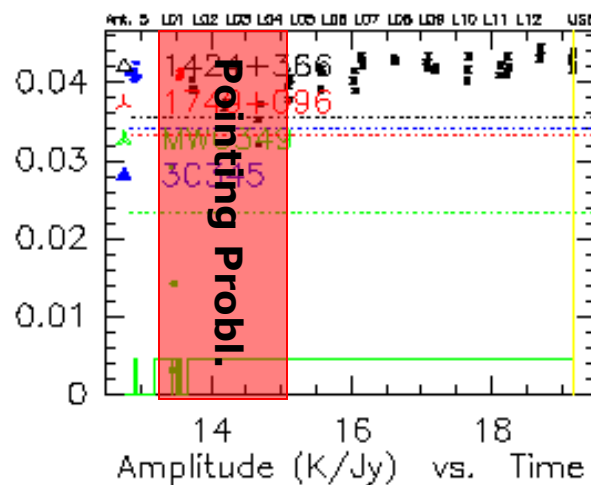
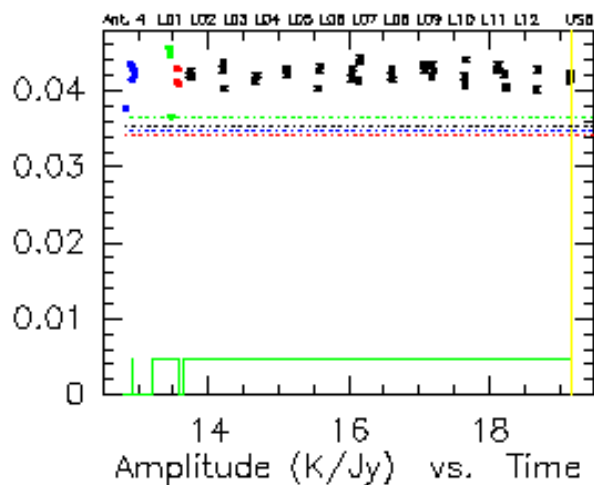
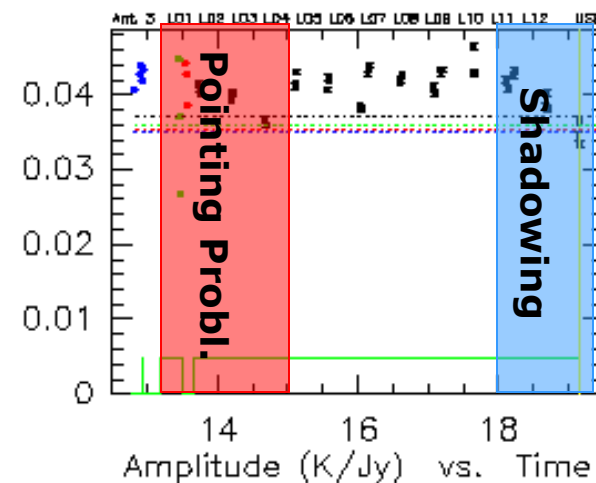
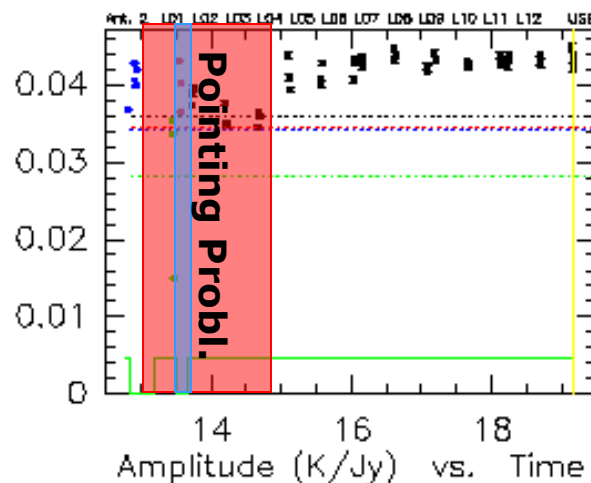
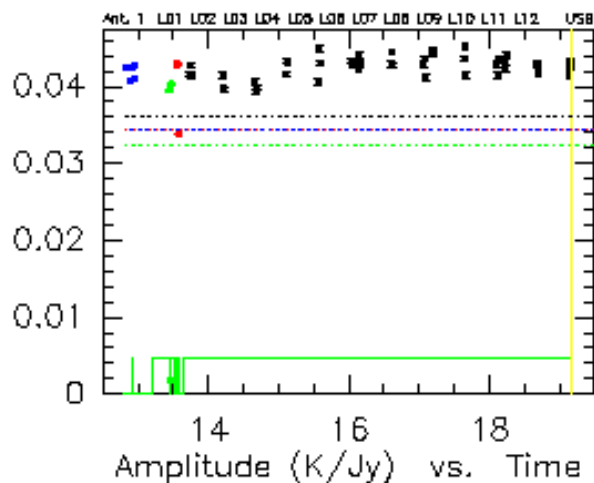


Practical Tips: Pointing/Focus

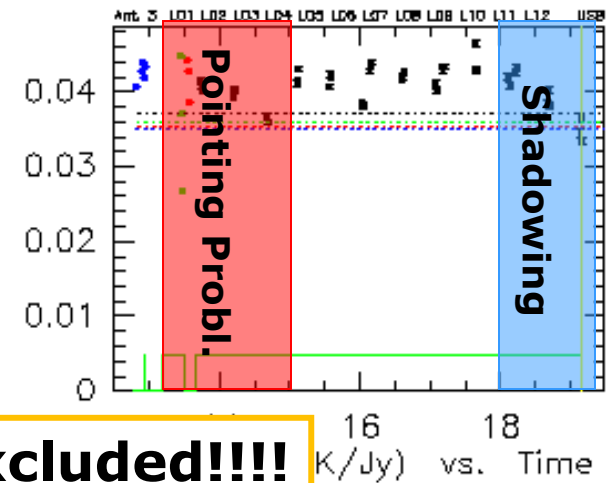
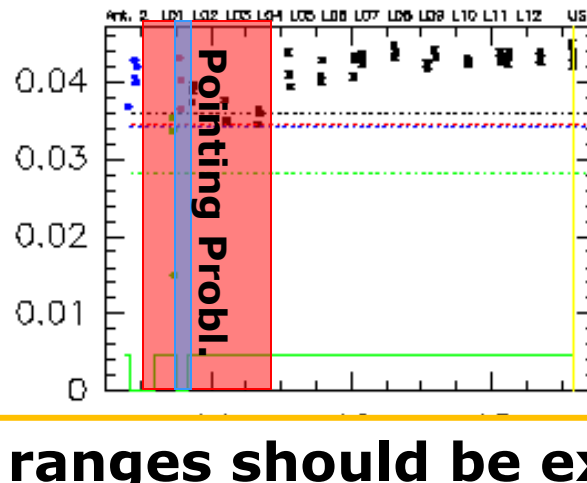
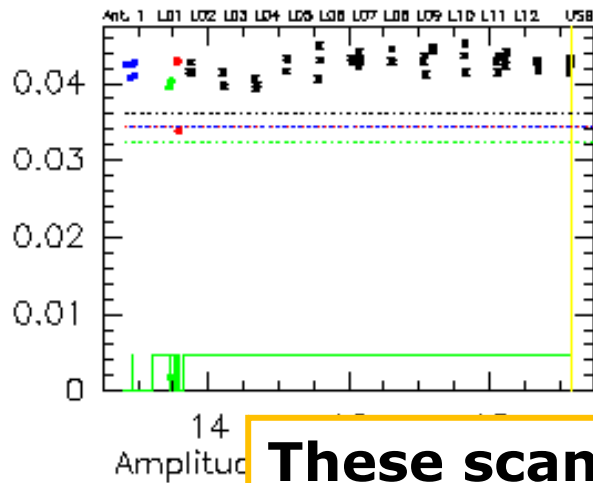
First Look



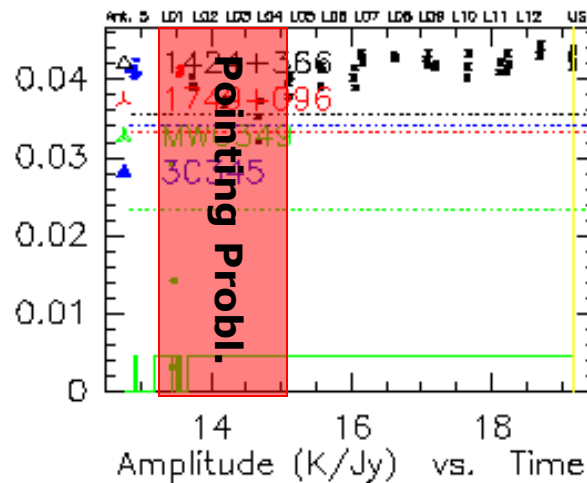
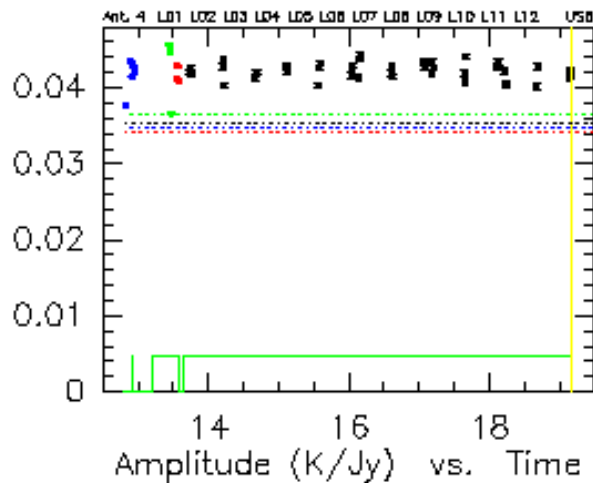
Practical Tips



Practical Tips



These scan ranges should be excluded!!!!



Which are the issues to consider?

Checklist:

- **Antenna Shadowing**
- **Pointing/Focus Problems**
- **Tracking Problems**
- **Noisy data**
- **Has Flux Calibrator Lines?**
- **Is Flux Calibrator Extended?**
- **Check Elevation of your source**
- **Check whether source is polarised
(only important when using one polarisation)**
- **Do phases of different spectral windows
overlap?**

Practical Tips: CLIC software tools

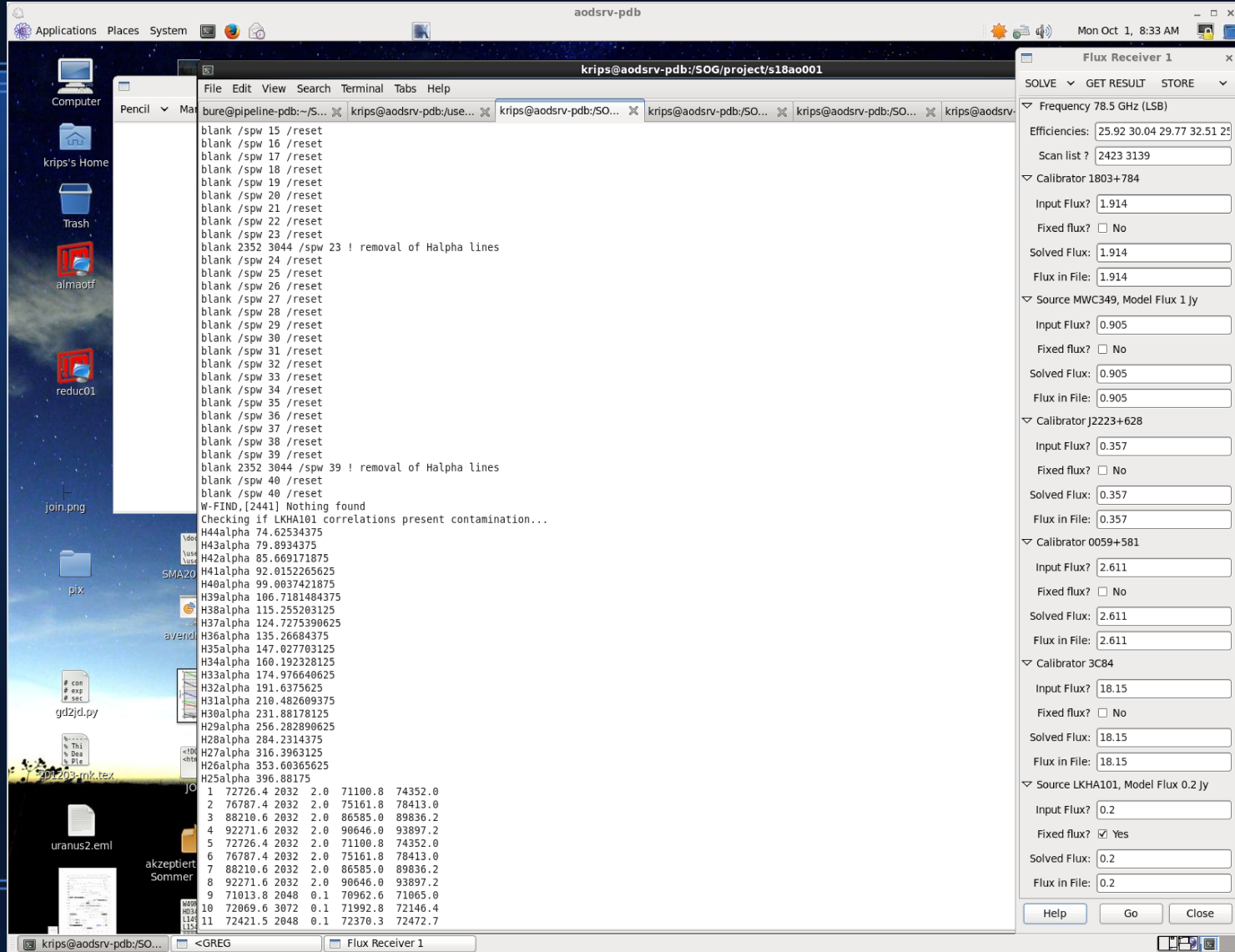
The screenshot shows a Linux terminal window with the following content:

```
krips@aodsvr-pdb:/SOG/project/s18ao001
File Edit View Search Terminal Tabs Help
bure@pipeline-pdb:~/S... x krips@aodsvr-pdb:/use... x krips@aodsvr-pdb:/SO... x krips@aodsvr-pdb:/SO... x krips@aodsvr-pdb:/SO... x krips@aodsvr-pdb:/SO... x bure@pipeline-pdb:~/S... x
blank /spw 15 /reset
blank /spw 16 /reset
blank /spw 17 /reset
blank /spw 18 /reset
blank /spw 19 /reset
blank /spw 20 /reset
blank /spw 21 /reset
blank /spw 22 /reset
blank /spw 23 /reset
blank 2352 3044 /spw 23 ! removal of Halpha Lines
blank /spw 24 /reset
blank /spw 25 /reset
blank /spw 26 /reset
blank /spw 27 /reset
blank /spw 28 /reset
blank /spw 29 /reset
blank /spw 30 /reset
blank /spw 31 /reset
blank /spw 32 /reset
blank /spw 33 /reset
blank /spw 34 /reset
blank /spw 35 /reset
blank /spw 36 /reset
blank /spw 37 /reset
blank /spw 38 /reset
blank /spw 39 /reset
blank 2352 3044 /spw 39 ! removal of Halpha Lines
blank /spw 40 /reset
blank /spw 40 /reset
W-FIND,[2441] Nothing found
Checking if LKHA101 correlations present contamination...
H44alpha 74.62534375
H43alpha 79.8934375
H42alpha 85.669171875
H41alpha 92.0152265625
H40alpha 99.0037421875
H39alpha 106.7181484375
H38alpha 115.255203125
H37alpha 124.7275390625
H36alpha 135.26684375
H35alpha 147.027703125
H34alpha 160.192328125
H33alpha 174.976640625
H32alpha 191.6375625
H31alpha 210.482699375
H30alpha 231.881703125
H29alpha 256.282890625
H28alpha 284.2314375
H27alpha 316.3963125
H26alpha 353.6035625
H25alpha 396.88175
1 72726.4 2032 2.0 71100.8 74352.0
2 76787.4 2032 2.0 75161.8 78413.0
3 88210.6 2032 2.0 86585.0 89836.2
4 92271.6 2032 2.0 90646.0 93897.2
5 72726.4 2032 2.0 71100.8 74352.0
6 76787.4 2032 2.0 75161.8 78413.0
7 88210.6 2032 2.0 86585.0 89836.2
8 92271.6 2032 2.0 90646.0 93897.2
9 71013.8 2048 0.1 70962.6 71065.0
10 72069.6 3072 0.1 71992.8 72146.4
11 72421.5 2048 0.1 72370.3 72472.7
```

The dialog box 'Standard calibration package for AFR' has the following fields and options:

- SELECT (highlighted with a red line)
- AUTOFLAG
- PHCOR
- RF
- PHASE
- FLUX (circled in red)
- AMPL.
- PRINT
- Use previous settings? Yes
- File name: /SOG/project/s18ao001/29-sep-2018-s18ao001.hpb
- First and last scan: 0 10000
- RECEIVER BAND = 1
- Buttons: Help, Go, Close

Practical Tips: CLIC software tools



The screenshot displays a Linux desktop environment with a terminal window and a Flux Receiver 1 application window. The terminal window shows the execution of a script that resets various spectral windows (spw) and performs a search for correlations. The Flux Receiver 1 window shows the results of the search, including the frequency, calibrator, and source information.

```
krips@aodsrv-pdb:~/SOG/project/s18ao001
File Edit View Search Terminal Tabs Help
bure@pipeline-pdb:~/JS... x krips@aodsrv-pdb:/use... x krips@aodsrv-pdb:/SO... x krips@aodsrv-pdb:/SO... x krips@aodsrv-pdb:/SO... x krips@aodsrv
blank /spw 15 /reset
blank /spw 16 /reset
blank /spw 17 /reset
blank /spw 18 /reset
blank /spw 19 /reset
blank /spw 20 /reset
blank /spw 21 /reset
blank /spw 22 /reset
blank /spw 23 /reset
blank 2352 3044 /spw 23 ! removal of Halpha Lines
blank /spw 24 /reset
blank /spw 25 /reset
blank /spw 26 /reset
blank /spw 27 /reset
blank /spw 28 /reset
blank /spw 29 /reset
blank /spw 30 /reset
blank /spw 31 /reset
blank /spw 32 /reset
blank /spw 33 /reset
blank /spw 34 /reset
blank /spw 35 /reset
blank /spw 36 /reset
blank /spw 37 /reset
blank /spw 38 /reset
blank /spw 39 /reset
blank 2352 3044 /spw 39 ! removal of Halpha Lines
blank /spw 40 /reset
blank /spw 40 /reset
W-FIND,[2441] Nothing found
Checking if LKHA101 correlations present contamination...
H44alpha 74.62534375
H43alpha 79.8934375
H42alpha 85.669171875
H41alpha 92.0152265625
H40alpha 99.0037421875
H39alpha 106.7181484375
H38alpha 115.255203125
H37alpha 124.7275390625
H36alpha 135.26684375
H35alpha 147.027703125
H34alpha 160.192328125
H33alpha 174.976640625
H32alpha 191.0375625
H31alpha 210.482609375
H30alpha 231.88178125
H29alpha 256.282890625
H28alpha 284.2314375
H27alpha 316.3963125
H26alpha 353.60365625
H25alpha 396.88175
1 72726.4 2032 2.0 71100.8 74352.0
2 76787.4 2032 2.0 75161.8 78413.0
3 88210.6 2032 2.0 86585.0 89836.2
4 92271.6 2032 2.0 90646.0 93897.2
5 72726.4 2032 2.0 71100.8 74352.0
6 76787.4 2032 2.0 75161.8 78413.0
7 88210.6 2032 2.0 86585.0 89836.2
8 92271.6 2032 2.0 90646.0 93897.2
9 71013.8 2048 0.1 70962.6 71065.0
10 72069.6 3072 0.1 71992.8 72146.4
11 72421.5 2048 0.1 72370.3 72472.7
```

Flux Receiver 1

SOLVE GET RESULT STORE

Frequency 78.5 GHz (LSB)

Efficiencies: 25.92 30.04 29.77 32.51 25.92

Scan list? 2423 3139

Calibrator 1803+784

Input Flux? 1.914

Fixed flux? No

Solved Flux: 1.914

Flux in File: 1.914

Source MWC349, Model Flux 1 Jy

Input Flux? 0.905

Fixed flux? No

Solved Flux: 0.905

Flux in File: 0.905

Calibrator J2223+628

Input Flux? 0.357

Fixed flux? No

Solved Flux: 0.357

Flux in File: 0.357

Calibrator 0059+581

Input Flux? 2.611

Fixed flux? No

Solved Flux: 2.611

Flux in File: 2.611

Calibrator 3C84

Input Flux? 18.15

Fixed flux? No

Solved Flux: 18.15

Flux in File: 18.15

Source LKHA101, Model Flux 0.2 Jy

Input Flux? 0.2

Fixed flux? Yes

Solved Flux: 0.2

Flux in File: 0.2

Help Go Close

Practical Tips: CLIC software tools

Takes out known lines on LkHa101 and MWC349

```
blank /spw 15 /reset
blank /spw 16 /reset
blank /spw 17 /reset
blank /spw 18 /reset
blank /spw 19 /reset
blank /spw 20 /reset
blank /spw 28 /reset
blank /spw 29 /reset
blank /spw 30 /reset
blank /spw 31 /reset
blank /spw 32 /reset
blank /spw 33 /reset
blank /spw 34 /reset
blank /spw 35 /reset
blank /spw 36 /reset
blank /spw 37 /reset
blank /spw 38 /reset
blank /spw 39 /reset
blank 2352 3044 /spw 39 ! removal of Halpha Lines
blank /spw 40 /reset
blank /spw 40 /reset
W-FIND,[2441] Nothing found
Checking if LKHA101 correlations present contamination...
H44alpha 74.62534375
H43alpha 79.8934375
H42alpha 85.669171875
H41alpha 92.0152265625
H40alpha 99.0037421875
H39alpha 106.7181484375
H38alpha 115.255203125
H37alpha 124.7275390625
H36alpha 135.26684375
H35alpha 147.027703125
H34alpha 160.192328125
H33alpha 174.976640625
H32alpha 191.0375625
H31alpha 210.482609375
H30alpha 231.881703125
H29alpha 256.282890625
H28alpha 284.2314375
H27alpha 316.3963125
H26alpha 353.60365625
H25alpha 396.88175
1 72726.4 2032 2.0 71100.8 74352.0
2 70787.5 2032 2.0 71101.8 74813.0
3 88210.6 2032 2.0 86585.0 89836.2
4 92271.6 2032 2.0 90646.0 93897.2
5 72726.4 2032 2.0 71100.8 74352.0
6 76787.4 2032 2.0 75161.8 78413.0
7 88210.6 2032 2.0 86585.0 89836.2
8 92271.6 2032 2.0 90646.0 93897.2
9 71013.8 2048 0.1 70962.6 71065.0
10 72069.6 3072 0.1 71992.8 72146.4
11 72421.5 2048 0.1 72370.3 72472.7
```

Practical Tips: CLIC software tools

The screenshot displays a Linux desktop environment with a terminal window and a Flux Receiver 1 control panel. The terminal window shows the execution of various commands and the resulting data for the LKHA101 source.

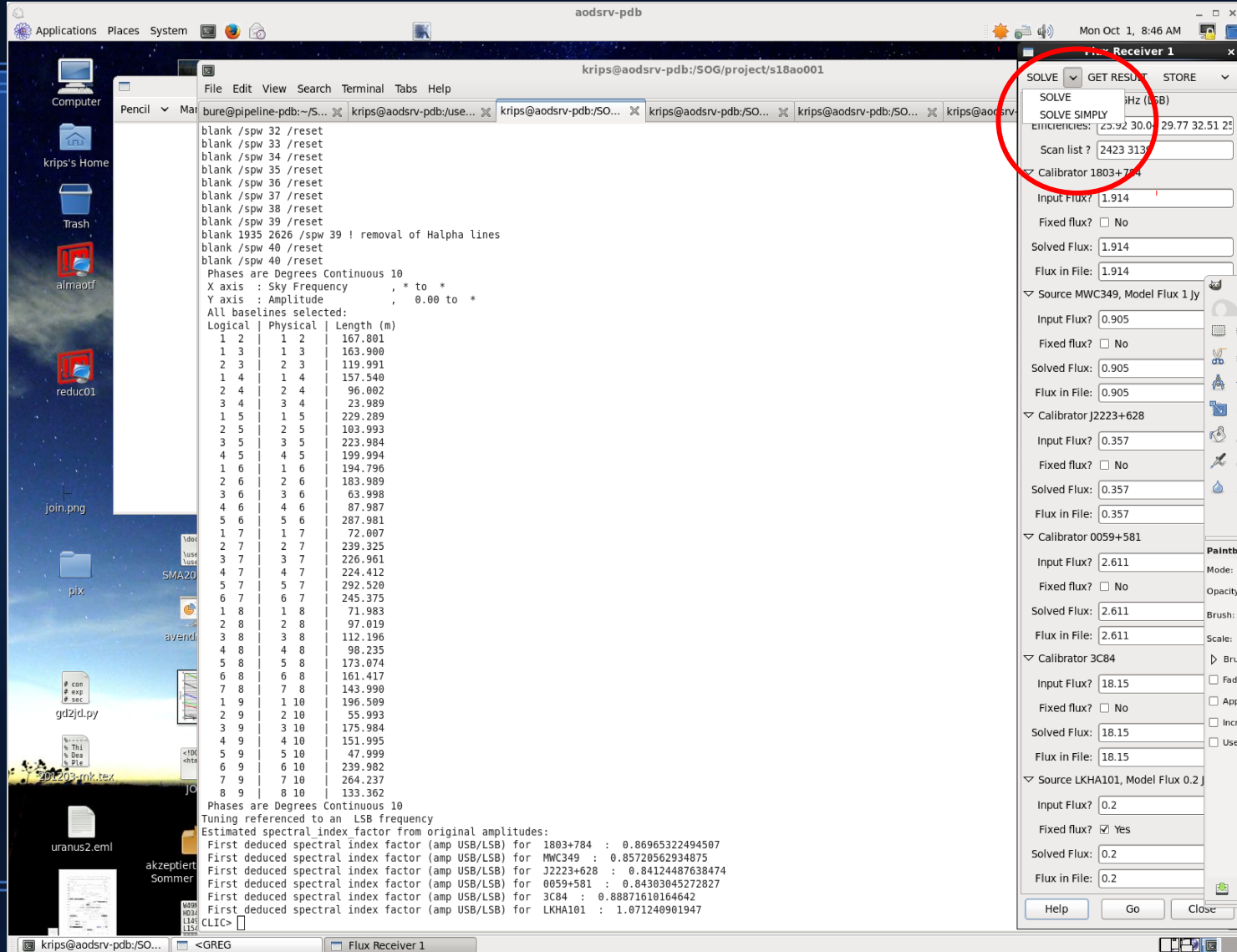
Terminal Output:

```
krips@aodsrv-pdb:~/SOG/project/s18ao001
File Edit View Search Terminal Tabs Help
bure@pipeline-pdb:~/JS... x krips@aodsrv-pdb:/use... x krips@aodsrv-pdb:/SO... x krips@aodsrv-pdb:/SO... x krips@aodsrv-pdb:/SO... x krips@aodsrv-pdb:/SO... x krips@aodsrv-pdb:/SO... x
blank /spw 15 /reset
blank /spw 16 /reset
blank /spw 17 /reset
blank /spw 18 /reset
blank /spw 19 /reset
blank /spw 20 /reset
blank /spw 21 /reset
blank /spw 22 /reset
blank /spw 23 /reset
blank 2352 3044 /spw 23 ! removal of Halpha Lines
blank /spw 24 /reset
blank /spw 25 /reset
blank /spw 26 /reset
blank /spw 27 /reset
blank /spw 28 /reset
blank /spw 29 /reset
blank /spw 30 /reset
blank /spw 31 /reset
blank /spw 32 /reset
blank /spw 33 /reset
blank /spw 34 /reset
blank /spw 35 /reset
blank /spw 36 /reset
blank /spw 37 /reset
blank /spw 38 /reset
blank /spw 39 /reset
blank 2352 3044 /spw 39 ! removal of Halpha Lines
blank /spw 40 /reset
blank /spw 40 /reset
W-FIND,[2441] Nothing found
Checking if LKHA101 correlations present contamination...
H44alpha 74.62534375
H43alpha 79.8934375
H42alpha 85.669171875
H41alpha 92.0152265625
H40alpha 99.0037421875
H39alpha 106.7181484375
H38alpha 115.255203125
H37alpha 124.7275390625
H36alpha 135.26684375
H35alpha 147.027703125
H34alpha 160.192328125
H33alpha 174.976640625
H32alpha 191.0375625
H31alpha 210.482609375
H30alpha 231.88178125
H29alpha 256.282890625
H28alpha 284.2314375
H27alpha 316.3963125
H26alpha 353.60365625
H25alpha 396.88175
1 72726.4 2032 2.0 71100.8 74352.0
2 76787.4 2032 2.0 75161.8 78413.0
3 88210.6 2032 2.0 86585.0 89836.2
4 92271.6 2032 2.0 90646.0 93897.2
5 72726.4 2032 2.0 71100.8 74352.0
6 76787.4 2032 2.0 75161.8 78413.0
7 88210.6 2032 2.0 86585.0 89836.2
8 92271.6 2032 2.0 90646.0 93897.2
9 71013.8 2048 0.1 70962.6 71065.0
10 72069.6 3072 0.1 71992.8 72146.4
11 72421.5 2048 0.1 72370.3 72472.7
```

Flux Receiver 1 Control Panel:

- SOLVE** (highlighted with a red circle)
- RESULT**
- STORE**
- Frequency: 78.5 GHz (LSB)
- Efficiencies: 25.92 30.04 29.77 32.51 25.92
- Scan list: 2423 3139
- Calibrator 1803+784
 - Input Flux: 1.914
 - Fixed flux: No
 - Solved Flux: 1.914
 - Flux in File: 1.914
- Source MWC349, Model Flux 1 Jy
 - Input Flux: 0.905
 - Fixed flux: No
 - Solved Flux: 0.905
 - Flux in File: 0.905
- Calibrator J2223+628
 - Input Flux: 0.357
 - Fixed flux: No
 - Solved Flux: 0.357
 - Flux in File: 0.357
- Calibrator 0059+581
 - Input Flux: 2.611
 - Fixed flux: No
 - Solved Flux: 2.611
 - Flux in File: 2.611
- Calibrator 3C84
 - Input Flux: 18.15
 - Fixed flux: No
 - Solved Flux: 18.15
 - Flux in File: 18.15
- Source LKHA101, Model Flux 0.2 Jy
 - Input Flux: 0.2
 - Fixed flux: Yes
 - Solved Flux: 0.2
 - Flux in File: 0.2

Practical Tips: CLIC software tools



Applications Places System

Mon Oct 1, 8:46 AM

krips@aodsrv-pdb:/SOG/project/s18ao001

```
File Edit View Search Terminal Tabs Help
bure@pipeline-pdb:~/S... x krips@aodsrv-pdb:/use... x krips@aodsrv-pdb:/SO... x krips@aodsrv-pdb:/SO... x krips@aodsrv-pdb:/SO... x krips@aodsrv-pdb:/SO...
blank /spw 32 /reset
blank /spw 33 /reset
blank /spw 34 /reset
blank /spw 35 /reset
blank /spw 36 /reset
blank /spw 37 /reset
blank /spw 38 /reset
blank /spw 39 /reset
blank 1935 2626 /spw 39 ! removal of Halpha lines
blank /spw 40 /reset
blank /spw 40 /reset
Phases are Degrees Continuous 10
X axis : Sky Frequency      , * to *
Y axis : Amplitude         , 0.00 to *
All baselines selected:
Logical | Physical | Length (m)
1 2     | 1 2     | 167.801
1 3     | 1 3     | 163.900
2 3     | 2 3     | 119.991
1 4     | 1 4     | 157.540
2 4     | 2 4     | 96.002
3 4     | 3 4     | 23.989
1 5     | 1 5     | 229.289
2 5     | 2 5     | 103.993
3 5     | 3 5     | 223.984
4 5     | 4 5     | 199.994
1 6     | 1 6     | 194.796
2 6     | 2 6     | 183.989
3 6     | 3 6     | 63.998
4 6     | 4 6     | 87.987
5 6     | 5 6     | 287.981
1 7     | 1 7     | 72.007
2 7     | 2 7     | 239.325
3 7     | 3 7     | 226.961
4 7     | 4 7     | 224.412
5 7     | 5 7     | 292.520
6 7     | 6 7     | 245.375
1 8     | 1 8     | 71.983
2 8     | 2 8     | 97.019
3 8     | 3 8     | 112.196
4 8     | 4 8     | 98.235
5 8     | 5 8     | 173.074
6 8     | 6 8     | 161.417
7 8     | 7 8     | 143.990
1 9     | 1 9     | 196.509
2 9     | 2 9     | 55.993
3 9     | 3 9     | 175.984
4 9     | 4 9     | 151.995
5 9     | 5 9     | 47.999
6 9     | 6 9     | 239.982
7 9     | 7 9     | 264.237
8 9     | 8 9     | 133.362
Phases are Degrees Continuous 10
Tuning referenced to an LSB frequency
Estimated spectral index factor from original amplitudes:
First deduced spectral index factor (amp USB/LSB) for 1803+784 : 0.86965322494507
First deduced spectral index factor (amp USB/LSB) for MWC349 : 0.85720562934875
First deduced spectral index factor (amp USB/LSB) for J2223+628 : 0.84124487638474
First deduced spectral index factor (amp USB/LSB) for 0059+581 : 0.84303045272827
First deduced spectral index factor (amp USB/LSB) for 3C84 : 0.88871610164642
First deduced spectral index factor (amp USB/LSB) for LKHA101 : 1.071240901947
CLIC>
```

Receiver 1

SOLVE GET RESULT STORE

SOLVE MHz (LSB)

SOLVE SIMPLY

Efficiencies: 23.92 30.0 29.77 32.51 29.77

Scan list ? 2423 313

Calibrator 1803+784

Input Flux? 1.914

Fixed flux? No

Solved Flux: 1.914

Flux in File: 1.914

Source MWC349, Model Flux 1 Jy

Input Flux? 0.905

Fixed flux? No

Solved Flux: 0.905

Flux in File: 0.905

Calibrator J2223+628

Input Flux? 0.357

Fixed flux? No

Solved Flux: 0.357

Flux in File: 0.357

Calibrator 0059+581

Input Flux? 2.611

Fixed flux? No

Solved Flux: 2.611

Flux in File: 2.611

Calibrator 3C84

Input Flux? 18.15

Fixed flux? No

Solved Flux: 18.15

Flux in File: 18.15

Source LKHA101, Model Flux 0.2 Jy

Input Flux? 0.2

Fixed flux? Yes

Solved Flux: 0.2

Flux in File: 0.2

Help Go Close

Practical Tips: CLIC software tools

The screenshot shows a Linux desktop environment with a terminal window and a 'Receiver 1' configuration window. The terminal window displays the following output:

```
blank /spw 32 /reset
blank /spw 33 /reset
blank /spw 34 /reset
blank /spw 35 /reset
blank /spw 36 /reset
blank /spw 37 /reset
blank /spw 38 /reset
blank /spw 39 /reset
blank 1935 2626 /spw 39 ! removal of Halpha lines
blank /spw 40 /reset
blank /spw 40 /reset
Phases are Degrees Continuous 10
X axis : Sky Frequency      , * to *
Y axis : Amplitude          , 0.00 to *
All baselines selected:
Logical | Physical | Length (m)
1 2     | 1 2     | 167.801
1 3     | 1 3     | 163.900
2 3     | 2 3     | 119.991
1 4     | 1 4     | 157.540
2 4     | 2 4     | 96.002
3 4     | 3 4     | 23.989
1 5     | 1 5     | 229.289
2 5     | 2 5     | 103.993
3 5     | 3 5     | 223.984
4 5     | 4 5     | 199.994
1 6     | 1 6     | 194.796
2 6     | 2 6     | 183.989
3 6     | 3 6     | 63.998
4 6     | 4 6     | 87.987
5 6     | 5 6     | 287.981
1 7     | 1 7     | 72.007
2 7     | 2 7     | 239.325
3 7     | 3 7     | 226.961
4 7     | 4 7     | 224.412
5 7     | 5 7     | 292.520
6 7     | 6 7     | 245.375
1 8     | 1 8     | 71.983
2 8     | 2 8     | 97.019
3 8     | 3 8     | 112.196
4 8     | 4 8     | 98.235
5 8     | 5 8     | 173.074
6 8     | 6 8     | 161.417
7 8     | 7 8     | 143.990
1 9     | 1 9     | 196.509
2 9     | 2 9     | 55.993
3 9     | 3 9     | 175.984
4 9     | 4 9     | 151.995
5 9     | 5 9     | 47.999
6 9     | 6 9     | 239.982
7 9     | 7 9     | 264.237
8 9     | 8 9     | 133.362
Phases are Degrees Continuous 10
Tuning referenced to an LSB frequency
Estimated spectral index factor from original amplitudes:
First deduced spectral index factor (amp USB/LSB) for 1803+784 : 0.86965322494507
First deduced spectral index factor (amp USB/LSB) for MWC349 : 0.85720562934875
First deduced spectral index factor (amp USB/LSB) for J2223+628 : 0.84124487638474
First deduced spectral index factor (amp USB/LSB) for 0059+581 : 0.84303045272827
First deduced spectral index factor (amp USB/LSB) for 3C84 : 0.88871610164642
First deduced spectral index factor (amp USB/LSB) for LKHA101 : 1.071240901947
CLIC>
```

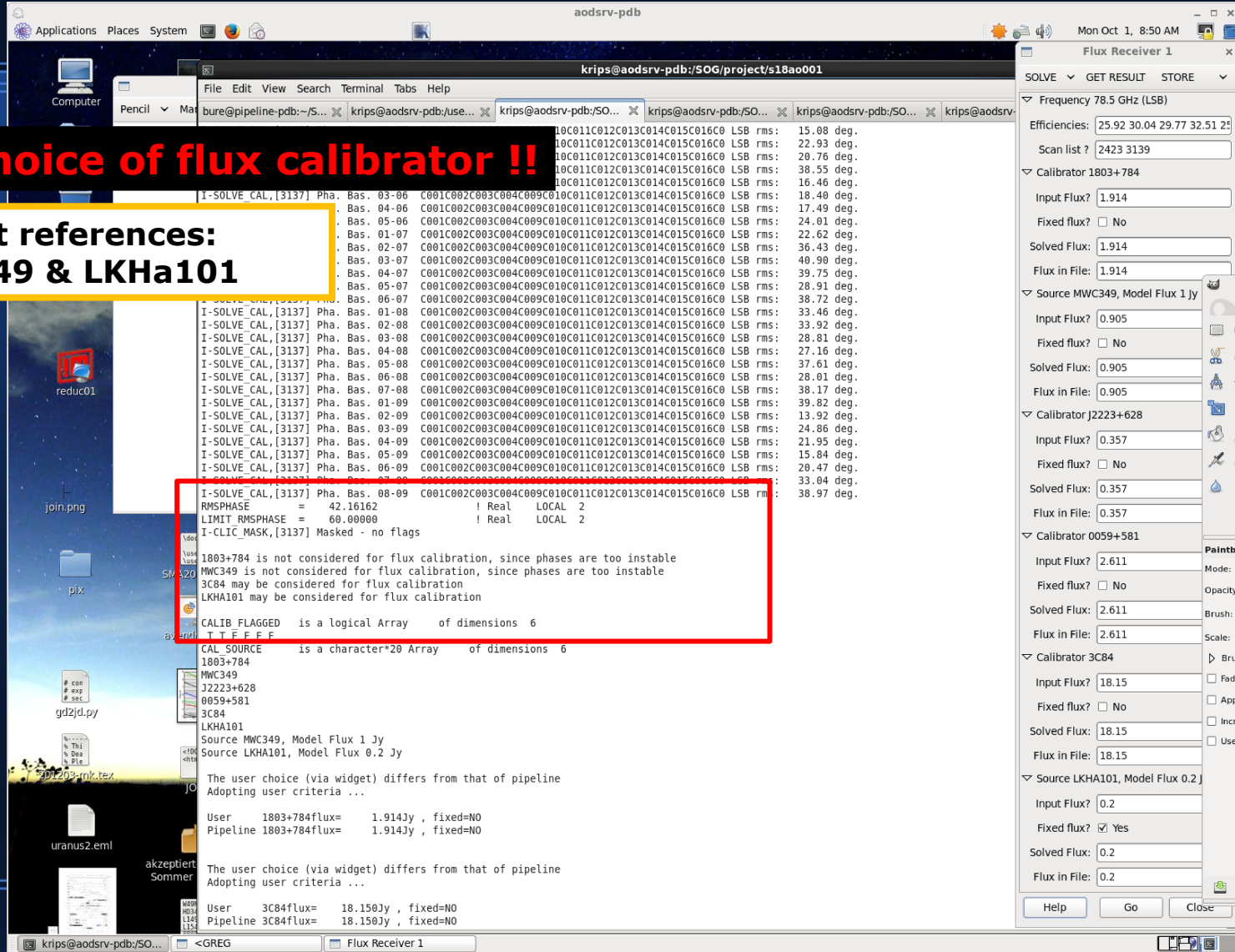
The 'Receiver 1' configuration window is open, showing various settings for the receiver. A red circle highlights the 'SOLVE' button, and a red arrow points to it. The window also shows a table of frequencies and fluxes:

Source	Model	Flux
1803+784	Model Flux 1 Jy	1.914
MWC349	Model Flux 1 Jy	0.905
J2223+628	Model Flux 1 Jy	0.357
0059+581	Model Flux 1 Jy	2.611
3C84	Model Flux 1 Jy	18.15
LKHA101	Model Flux 0.2 Jy	0.2

Practical Tips: CLIC software tools

1.) Choice of flux calibrator !!

Default references:
MWC349 & LKHa101



The screenshot shows a Linux desktop environment with a terminal window and a Flux Receiver 1 GUI. The terminal window displays the output of the CLIC software, including a list of calibrators and their associated flux values. A red box highlights a section of the terminal output that lists the calibrators and their flux values, along with a warning message about the choice of calibrator.

```
I-SOLVE CAL, [3137] Pha. Bas. 03-06 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 15.08 deg.
I-SOLVE CAL, [3137] Pha. Bas. 04-06 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 22.93 deg.
I-SOLVE CAL, [3137] Pha. Bas. 05-06 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 20.76 deg.
I-SOLVE CAL, [3137] Pha. Bas. 01-07 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 38.55 deg.
I-SOLVE CAL, [3137] Pha. Bas. 02-07 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 16.46 deg.
I-SOLVE CAL, [3137] Pha. Bas. 03-07 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 18.49 deg.
I-SOLVE CAL, [3137] Pha. Bas. 04-07 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 17.49 deg.
I-SOLVE CAL, [3137] Pha. Bas. 05-07 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 24.81 deg.
I-SOLVE CAL, [3137] Pha. Bas. 06-07 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 22.62 deg.
I-SOLVE CAL, [3137] Pha. Bas. 01-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 36.43 deg.
I-SOLVE CAL, [3137] Pha. Bas. 02-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 49.90 deg.
I-SOLVE CAL, [3137] Pha. Bas. 03-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 39.75 deg.
I-SOLVE CAL, [3137] Pha. Bas. 04-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 28.91 deg.
I-SOLVE CAL, [3137] Pha. Bas. 05-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 38.72 deg.
I-SOLVE CAL, [3137] Pha. Bas. 06-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 33.46 deg.
I-SOLVE CAL, [3137] Pha. Bas. 07-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 33.92 deg.
I-SOLVE CAL, [3137] Pha. Bas. 08-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 28.81 deg.
I-SOLVE CAL, [3137] Pha. Bas. 01-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 27.16 deg.
I-SOLVE CAL, [3137] Pha. Bas. 02-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 37.61 deg.
I-SOLVE CAL, [3137] Pha. Bas. 03-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 28.01 deg.
I-SOLVE CAL, [3137] Pha. Bas. 04-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 38.17 deg.
I-SOLVE CAL, [3137] Pha. Bas. 05-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 39.82 deg.
I-SOLVE CAL, [3137] Pha. Bas. 06-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 13.92 deg.
I-SOLVE CAL, [3137] Pha. Bas. 07-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 24.86 deg.
I-SOLVE CAL, [3137] Pha. Bas. 08-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 21.95 deg.
I-SOLVE CAL, [3137] Pha. Bas. 09-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 15.84 deg.
I-SOLVE CAL, [3137] Pha. Bas. 10-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 20.47 deg.
I-SOLVE CAL, [3137] Pha. Bas. 11-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 33.04 deg.
I-SOLVE CAL, [3137] Pha. Bas. 12-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 38.97 deg.

RMSPHASE = 42.16162 ! Real LOCAL 2
LIMIT RMSPHASE = 60.00000 ! Real LOCAL 2
I-CLIC_MASK, [3137] Masked - no flags

1803+784 is not considered for flux calibration, since phases are too instable
MWC349 is not considered for flux calibration, since phases are too instable
3C84 may be considered for flux calibration
LKHA101 may be considered for flux calibration

CALIB FLAGGED is a logical Array of dimensions 6
T T F F F F
CAL_SOURCE is a character*20 Array of dimensions 6
1803+784
MWC349
J2223+628
0059+581
3C84
LKHA101
Source MWC349, Model Flux 1 Jy
Source LKHA101, Model Flux 0.2 Jy

The user choice (via widget) differs from that of pipeline
Adopting user criteria ...
User 1803+784flux= 1.914Jy , fixed=NO
Pipeline 1803+784flux= 1.914Jy , fixed=NO

The user choice (via widget) differs from that of pipeline
Adopting user criteria ...
User 3C84flux= 18.150Jy , fixed=NO
Pipeline 3C84flux= 18.150Jy , fixed=NO
```

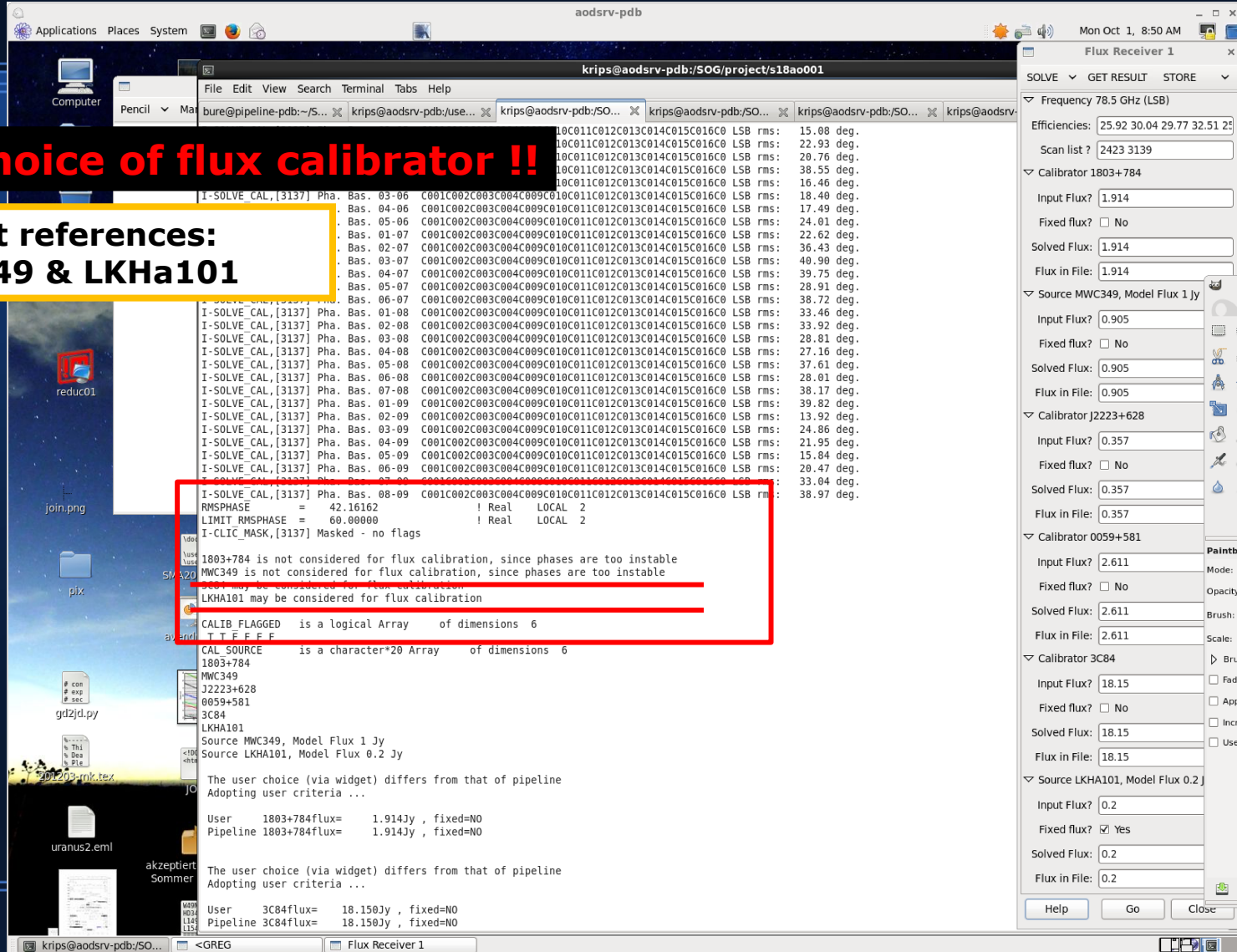
The Flux Receiver 1 GUI shows the following settings:

- Frequency: 78.5 GHz (LSB)
- Efficiencies: 25.92 30.04 29.77 32.51 25
- Scan list: 2423 3139
- Calibrator: 1803+784
- Input Flux: 1.914
- Fixed flux: No
- Solved Flux: 1.914
- Flux in File: 1.914
- Source: MWC349, Model Flux 1 Jy
- Input Flux: 0.905
- Fixed flux: No
- Solved Flux: 0.905
- Flux in File: 0.905
- Calibrator: J2223+628
- Input Flux: 0.357
- Fixed flux: No
- Solved Flux: 0.357
- Flux in File: 0.357
- Calibrator: 0059+581
- Input Flux: 2.611
- Fixed flux: No
- Solved Flux: 2.611
- Flux in File: 2.611
- Calibrator: 3C84
- Input Flux: 18.15
- Fixed flux: No
- Solved Flux: 18.15
- Flux in File: 18.15
- Source: LKHA101, Model Flux 0.2 Jy
- Input Flux: 0.2
- Fixed flux: Yes
- Solved Flux: 0.2
- Flux in File: 0.2

Practical Tips: CLIC software tools

1.) Choice of flux calibrator !!

Default references:
MWC349 & LKHa101



```
I-SOLVE CAL, [3137] Pha. Bas. 03-06 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 15.08 deg.
I-SOLVE CAL, [3137] Pha. Bas. 04-06 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 22.93 deg.
I-SOLVE CAL, [3137] Pha. Bas. 05-06 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 20.76 deg.
I-SOLVE CAL, [3137] Pha. Bas. 01-07 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 38.55 deg.
I-SOLVE CAL, [3137] Pha. Bas. 02-07 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 16.46 deg.
I-SOLVE CAL, [3137] Pha. Bas. 03-07 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 18.49 deg.
I-SOLVE CAL, [3137] Pha. Bas. 04-07 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 17.49 deg.
I-SOLVE CAL, [3137] Pha. Bas. 05-07 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 24.81 deg.
I-SOLVE CAL, [3137] Pha. Bas. 06-07 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 22.62 deg.
I-SOLVE CAL, [3137] Pha. Bas. 01-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 36.43 deg.
I-SOLVE CAL, [3137] Pha. Bas. 02-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 49.90 deg.
I-SOLVE CAL, [3137] Pha. Bas. 03-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 39.75 deg.
I-SOLVE CAL, [3137] Pha. Bas. 04-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 28.91 deg.
I-SOLVE CAL, [3137] Pha. Bas. 05-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 38.72 deg.
I-SOLVE CAL, [3137] Pha. Bas. 06-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 33.46 deg.
I-SOLVE CAL, [3137] Pha. Bas. 07-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 33.92 deg.
I-SOLVE CAL, [3137] Pha. Bas. 08-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 28.81 deg.
I-SOLVE CAL, [3137] Pha. Bas. 01-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 27.16 deg.
I-SOLVE CAL, [3137] Pha. Bas. 02-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 37.61 deg.
I-SOLVE CAL, [3137] Pha. Bas. 03-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 28.01 deg.
I-SOLVE CAL, [3137] Pha. Bas. 04-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 38.17 deg.
I-SOLVE CAL, [3137] Pha. Bas. 05-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 39.82 deg.
I-SOLVE CAL, [3137] Pha. Bas. 06-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 13.92 deg.
I-SOLVE CAL, [3137] Pha. Bas. 07-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 24.86 deg.
I-SOLVE CAL, [3137] Pha. Bas. 08-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 21.95 deg.
I-SOLVE CAL, [3137] Pha. Bas. 01-10 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 15.84 deg.
I-SOLVE CAL, [3137] Pha. Bas. 02-10 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 20.47 deg.
I-SOLVE CAL, [3137] Pha. Bas. 03-10 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 33.04 deg.
I-SOLVE CAL, [3137] Pha. Bas. 04-10 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 38.97 deg.
I-SOLVE CAL, [3137] Pha. Bas. 05-10 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 38.97 deg.
RMSPHASE = 42.16162 ! Real LOCAL 2
LIMIT RMSPHASE = 60.00000 ! Real LOCAL 2
I-CLIC_MASK, [3137] Masked - no flags

1803+784 is not considered for flux calibration, since phases are too instable
MWC349 is not considered for flux calibration, since phases are too instable
3C84 may be considered for flux calibration
LKHA101 may be considered for flux calibration

CALIB FLAGGED is a logical Array of dimensions 6
T T F F F F
CAL SOURCE is a character*20 Array of dimensions 6
1803+784
MWC349
J2223+628
0059+581
3C84
LKHA101
Source MWC349, Model Flux 1 Jy
Source LKHA101, Model Flux 0.2 Jy

The user choice (via widget) differs from that of pipeline
Adopting user criteria ...
User 1803+784flux= 1.914Jy , fixed=NO
Pipeline 1803+784flux= 1.914Jy , fixed=NO

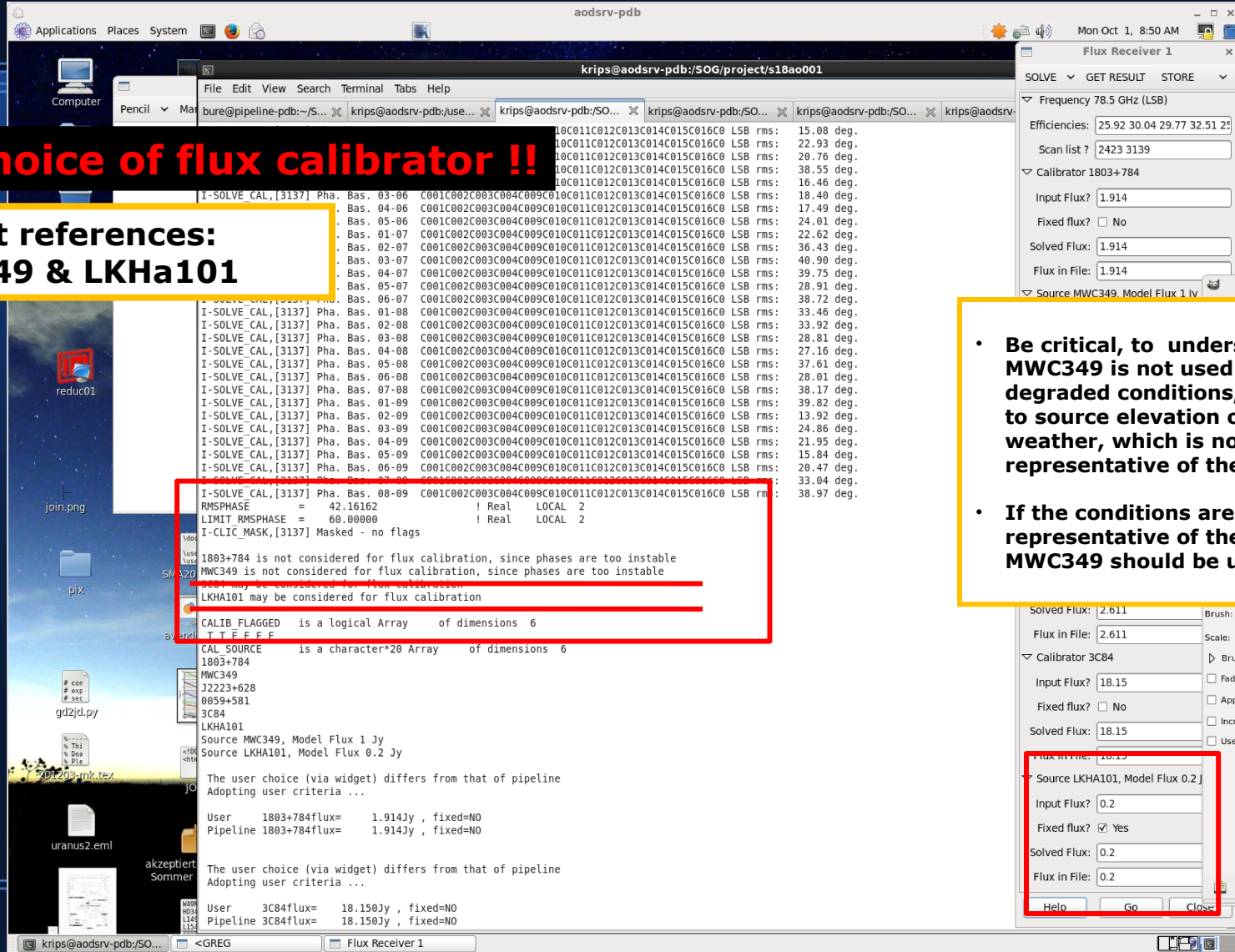
The user choice (via widget) differs from that of pipeline
Adopting user criteria ...
User 3C84flux= 18.150Jy , fixed=NO
Pipeline 3C84flux= 18.150Jy , fixed=NO
```

Practical Tips: CLIC software tools

1.) Choice of flux calibrator !!

Default references:
MWC349 & LKHa101

- Be critical, to understand why MWC349 is not used : e.g. briefly degraded conditions, perhaps due to source elevation or changing weather, which is not representative of the track.
- If the conditions are representative of the track, MWC349 should be used



The screenshot shows a Linux desktop with the aodsrp-pdb software running. The terminal window displays the following output:

```
I-SOLVE CAL, [3137] Pha. Bas. 03-06 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 15.08 deg.
I-SOLVE CAL, [3137] Pha. Bas. 04-06 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 22.93 deg.
I-SOLVE CAL, [3137] Pha. Bas. 05-06 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 20.76 deg.
I-SOLVE CAL, [3137] Pha. Bas. 01-07 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 38.55 deg.
I-SOLVE CAL, [3137] Pha. Bas. 02-07 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 16.46 deg.
I-SOLVE CAL, [3137] Pha. Bas. 03-07 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 18.49 deg.
I-SOLVE CAL, [3137] Pha. Bas. 04-07 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 17.49 deg.
I-SOLVE CAL, [3137] Pha. Bas. 05-07 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 24.81 deg.
I-SOLVE CAL, [3137] Pha. Bas. 06-07 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 22.62 deg.
I-SOLVE CAL, [3137] Pha. Bas. 01-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 36.43 deg.
I-SOLVE CAL, [3137] Pha. Bas. 02-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 49.90 deg.
I-SOLVE CAL, [3137] Pha. Bas. 03-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 39.75 deg.
I-SOLVE CAL, [3137] Pha. Bas. 04-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 28.91 deg.
I-SOLVE CAL, [3137] Pha. Bas. 05-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 38.72 deg.
I-SOLVE CAL, [3137] Pha. Bas. 06-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 33.46 deg.
I-SOLVE CAL, [3137] Pha. Bas. 07-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 33.92 deg.
I-SOLVE CAL, [3137] Pha. Bas. 08-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 28.81 deg.
I-SOLVE CAL, [3137] Pha. Bas. 01-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 27.16 deg.
I-SOLVE CAL, [3137] Pha. Bas. 02-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 37.61 deg.
I-SOLVE CAL, [3137] Pha. Bas. 03-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 28.01 deg.
I-SOLVE CAL, [3137] Pha. Bas. 04-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 38.17 deg.
I-SOLVE CAL, [3137] Pha. Bas. 05-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 39.82 deg.
I-SOLVE CAL, [3137] Pha. Bas. 06-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 13.92 deg.
I-SOLVE CAL, [3137] Pha. Bas. 07-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 24.86 deg.
I-SOLVE CAL, [3137] Pha. Bas. 08-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 21.95 deg.
I-SOLVE CAL, [3137] Pha. Bas. 09-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 15.84 deg.
I-SOLVE CAL, [3137] Pha. Bas. 10-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 20.47 deg.
I-SOLVE CAL, [3137] Pha. Bas. 11-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 33.04 deg.
I-SOLVE CAL, [3137] Pha. Bas. 12-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 38.97 deg.
RMSPHASE = 42.16162 ! Real LOCAL 2
LIMIT RMSPHASE = 60.00000 ! Real LOCAL 2
I-CLIC_MASK, [3137] Masked - no flags

1803+784 is not considered for flux calibration, since phases are too instable
MWC349 is not considered for flux calibration, since phases are too instable
3C84 may be considered for flux calibration
LKHA101 may be considered for flux calibration

CALIB FLAGGED is a logical Array of dimensions 6
T T F F F F
CAL_SOURCE is a character*20 Array of dimensions 6
1803+784
MWC349
J223+628
0059+581
3C84
LKHA101
Source MWC349, Model Flux 1 Jy
Source LKHA101, Model Flux 0.2 Jy

The user choice (via widget) differs from that of pipeline
Adopting user criteria ...
User 1803+784flux= 1.914Jy , fixed=NO
Pipeline 1803+784flux= 1.914Jy , fixed=NO

The user choice (via widget) differs from that of pipeline
Adopting user criteria ...
User 3C84flux= 18.150Jy , fixed=NO
Pipeline 3C84flux= 18.150Jy , fixed=NO
```

The Flux Receiver 1 window shows the following settings:

- Frequency: 78.5 GHz (LSB)
- Efficiencies: 25.92 30.04 29.77 32.51 25.92
- Scan list: 2423 3139
- Calibrator: 1803+784
- Input Flux: 1.914
- Fixed flux? No
- Solved Flux: 1.914
- Flux in File: 1.914
- Source: MWC349, Model Flux 1 Jy

The Flux Receiver 2 window shows the following settings:

- Solved Flux: 2.611
- Flux in File: 2.611
- Calibrator: 3C84
- Input Flux: 18.15
- Fixed flux? No
- Solved Flux: 18.15
- Flux in File: 18.15
- Source: LKHA101, Model Flux 0.2 Jy
- Input Flux: 0.2
- Fixed flux? Yes
- Solved Flux: 0.2
- Flux in File: 0.2

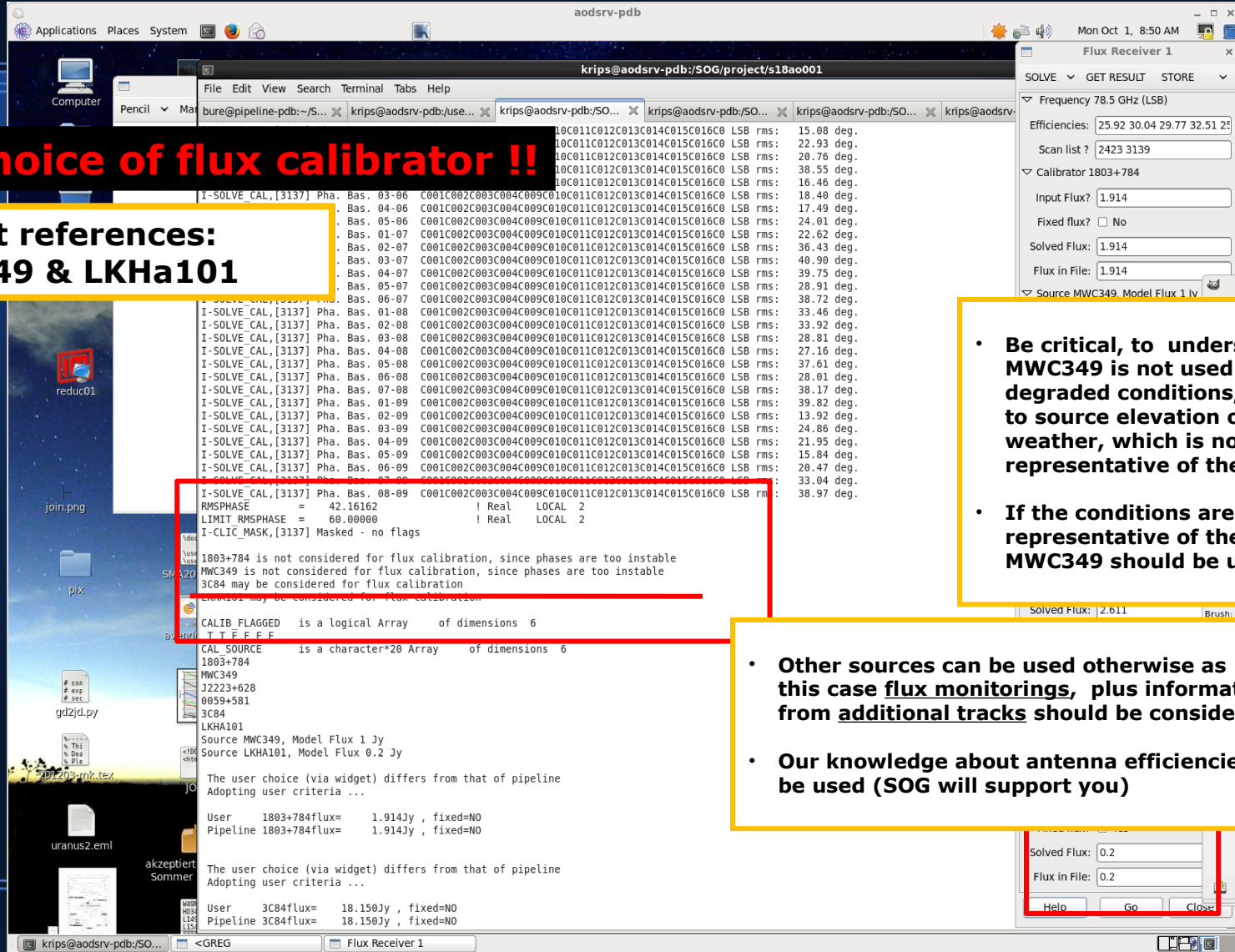
Practical Tips: CLIC software tools

1.) Choice of flux calibrator !!

Default references:
MWC349 & LKHa101

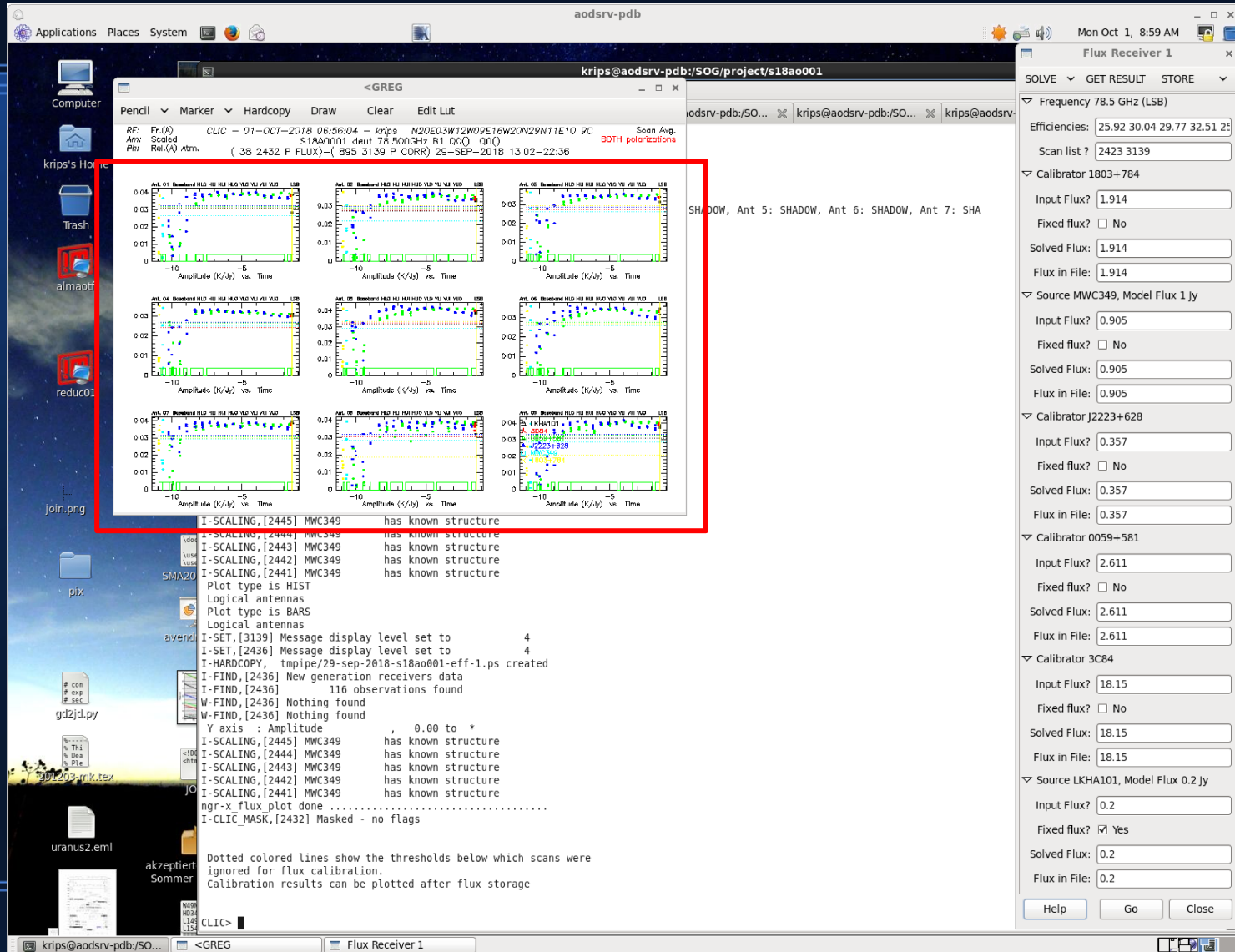
- Be critical, to understand why MWC349 is not used : e.g. briefly degraded conditions, perhaps due to source elevation or changing weather, which is not representative of the track.
- If the conditions are representative of the track, MWC349 should be used

- Other sources can be used otherwise as reference: in this case flux monitorings, plus information coming from additional tracks should be considered
- Our knowledge about antenna efficiencies should also be used (SOG will support you)



```
I-SOLVE CAL, [3137] Pha. Bas. 03-06 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 15.08 deg.
I-SOLVE CAL, [3137] Pha. Bas. 04-06 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 22.93 deg.
I-SOLVE CAL, [3137] Pha. Bas. 05-06 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 20.76 deg.
I-SOLVE CAL, [3137] Pha. Bas. 01-07 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 38.55 deg.
I-SOLVE CAL, [3137] Pha. Bas. 02-07 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 16.46 deg.
I-SOLVE CAL, [3137] Pha. Bas. 03-07 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 18.49 deg.
I-SOLVE CAL, [3137] Pha. Bas. 04-07 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 17.49 deg.
I-SOLVE CAL, [3137] Pha. Bas. 05-07 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 24.81 deg.
I-SOLVE CAL, [3137] Pha. Bas. 06-07 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 22.62 deg.
I-SOLVE CAL, [3137] Pha. Bas. 07-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 36.43 deg.
I-SOLVE CAL, [3137] Pha. Bas. 08-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 49.90 deg.
I-SOLVE CAL, [3137] Pha. Bas. 09-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 39.75 deg.
I-SOLVE CAL, [3137] Pha. Bas. 10-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 28.91 deg.
I-SOLVE CAL, [3137] Pha. Bas. 11-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 38.72 deg.
I-SOLVE CAL, [3137] Pha. Bas. 12-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 33.46 deg.
I-SOLVE CAL, [3137] Pha. Bas. 01-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 33.92 deg.
I-SOLVE CAL, [3137] Pha. Bas. 02-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 28.81 deg.
I-SOLVE CAL, [3137] Pha. Bas. 03-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 27.16 deg.
I-SOLVE CAL, [3137] Pha. Bas. 04-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 37.61 deg.
I-SOLVE CAL, [3137] Pha. Bas. 05-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 28.01 deg.
I-SOLVE CAL, [3137] Pha. Bas. 06-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 38.17 deg.
I-SOLVE CAL, [3137] Pha. Bas. 07-08 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 39.82 deg.
I-SOLVE CAL, [3137] Pha. Bas. 08-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 13.92 deg.
I-SOLVE CAL, [3137] Pha. Bas. 09-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 24.86 deg.
I-SOLVE CAL, [3137] Pha. Bas. 10-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 21.95 deg.
I-SOLVE CAL, [3137] Pha. Bas. 11-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 15.84 deg.
I-SOLVE CAL, [3137] Pha. Bas. 12-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 20.47 deg.
I-SOLVE CAL, [3137] Pha. Bas. 01-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 33.04 deg.
I-SOLVE CAL, [3137] Pha. Bas. 02-09 C001C002C003C004C009C010C011C012C013C014C015C016C0 LSB rms: 38.97 deg.
RMSPHASE = 42.16162 ! Real LOCAL 2
LIMIT RMSPHASE = 60.00000 ! Real LOCAL 2
I-CLIC_MASK, [3137] Masked - no flags
1803+784 is not considered for flux calibration, since phases are too instable
MWC349 is not considered for flux calibration, since phases are too instable
3C84 may be considered for flux calibration
MWC349 may be considered for flux calibration
CALIB FLAGGED is a logical Array of dimensions 6
T T F F F F
CAL SOURCE is a character*20 Array of dimensions 6
1803+784
MWC349
J2223+628
0959+581
3C84
LKHA101
Source MWC349, Model Flux 1 Jy
Source LKHA101, Model Flux 0.2 Jy
The user choice (via widget) differs from that of pipeline
Adopting user criteria ...
User 1803+784flux= 1.914Jy , fixed=NO
Pipeline 1803+784flux= 1.914Jy , fixed=NO
The user choice (via widget) differs from that of pipeline
Adopting user criteria ...
User 3C84flux= 18.150Jy , fixed=NO
Pipeline 3C84flux= 18.150Jy , fixed=NO
```

Practical Tips: CLIC software tools



Applications Places System Mon Oct 1, 8:59 AM

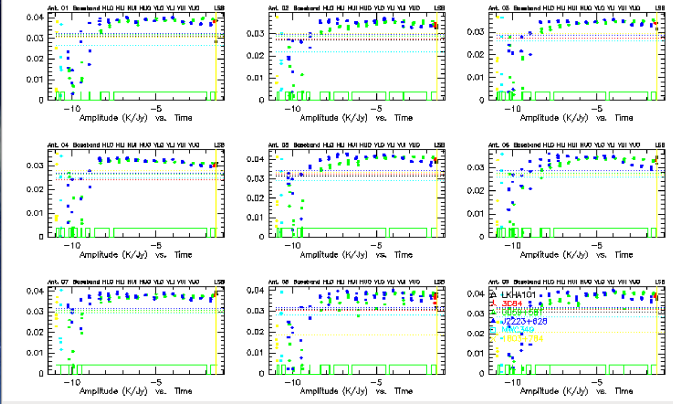
aodsrp-pdb

krips@aodsrp-pdb/SOG/project/s18ao001

Pencil Marker Hardcopy Draw Clear Edit Lut

RF: Fr (A) CLIC - 01-OCT-2018 06:56:04 - krips N20E0.3W12W09E16W20N29N11E10 9C Scan Avg.
 Ant: Scaded S18A0001 deut 78.500GHz B1 000 000 BOTH polarizations
 Ph: Rel.(A) Atm. (38 2432 P FLUX)-(895 3139 P CORR) 29-SEP-2018 13:02-22:36

Ant. 01: SHADOW, Ant 5: SHADOW, Ant 6: SHADOW, Ant 7: SHA



SHADOW, Ant 5: SHADOW, Ant 6: SHADOW, Ant 7: SHA

```

I-SCALING, [2445] MWC349 has known structure
I-SCALING, [2444] MWC349 has known structure
I-SCALING, [2443] MWC349 has known structure
I-SCALING, [2442] MWC349 has known structure
I-SCALING, [2441] MWC349 has known structure
Plot type is HIST
Logical antennas
Plot type is BARS
Logical antennas
I-SET, [3139] Message display level set to 4
I-SET, [2436] Message display level set to 4
I-HARDCOPY, tmpipe/29-sep-2018-s18ao001-eff-1.ps created
I-FIND, [2436] New generation receivers data
I-FIND, [2436] 116 observations found
W-FIND, [2436] Nothing found
W-FIND, [2436] Nothing found
Y axis : Amplitude, 0.00 to *
I-SCALING, [2445] MWC349 has known structure
I-SCALING, [2444] MWC349 has known structure
I-SCALING, [2443] MWC349 has known structure
I-SCALING, [2442] MWC349 has known structure
I-SCALING, [2441] MWC349 has known structure
ngr-x flux plot done .....
I-CLIC_MASK, [2432] Masked - no flags
    
```

Dotted colored lines show the thresholds below which scans were ignored for flux calibration.
 Calibration results can be plotted after flux storage

CLIC>

Flux Receiver 1

SOLVE GET RESULT STORE

Frequency 78.5 GHz (LSB)

Efficiencies: 25.92 30.04 29.77 32.51 25

Scan list ? 2423 3139

Calibrator 1803+784

Input Flux? 1.914

Fixed flux? No

Solved Flux: 1.914

Flux in File: 1.914

Source MWC349, Model Flux 1 Jy

Input Flux? 0.905

Fixed flux? No

Solved Flux: 0.905

Flux in File: 0.905

Calibrator J2223+628

Input Flux? 0.357

Fixed flux? No

Solved Flux: 0.357

Flux in File: 0.357

Calibrator 0059+581

Input Flux? 2.611

Fixed flux? No

Solved Flux: 2.611

Flux in File: 2.611

Calibrator 3C84

Input Flux? 18.15

Fixed flux? No

Solved Flux: 18.15

Flux in File: 18.15

Source LKHA101, Model Flux 0.2 Jy

Input Flux? 0.2

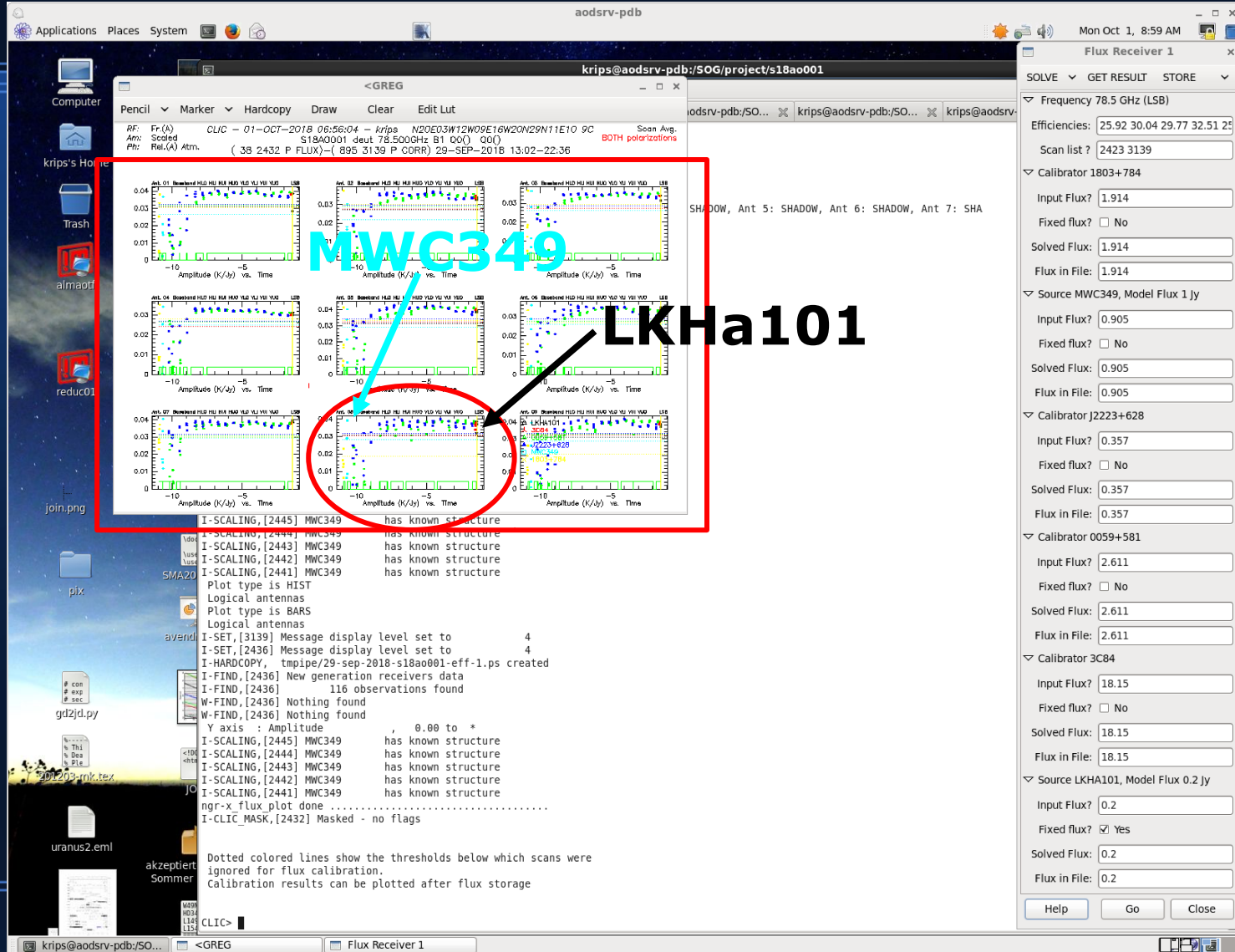
Fixed flux? Yes

Solved Flux: 0.2

Flux in File: 0.2

Help Go Close

Practical Tips: CLIC software tools



Applications Places System

Mon Oct 1, 8:59 AM

Flux Receiver 1

SOLVE GET RESULT STORE

Frequency 78.5 GHz (LSB)

Efficiencies: 25.92 30.04 29.77 32.51 25

Scan list ? 2423 3139

Calibrator 1803+784

Input Flux? 1.914

Fixed flux? No

Solved Flux: 1.914

Flux in File: 1.914

Source MWC349, Model Flux 1 Jy

Input Flux? 0.905

Fixed flux? No

Solved Flux: 0.905

Flux in File: 0.905

Calibrator J2223+628

Input Flux? 0.357

Fixed flux? No

Solved Flux: 0.357

Flux in File: 0.357

Calibrator 0059+581

Input Flux? 2.611

Fixed flux? No

Solved Flux: 2.611

Flux in File: 2.611

Calibrator 3C84

Input Flux? 18.15

Fixed flux? No

Solved Flux: 18.15

Flux in File: 18.15

Source LKH a101, Model Flux 0.2 Jy

Input Flux? 0.2

Fixed flux? Yes

Solved Flux: 0.2

Flux in File: 0.2

Help Go Close

Computer

krips's Home

Trash

alraaof

reduc01

join.png

pix

gd2jcd.py

uranus2.eml

akzeptiert Sommer

CLIC>

RF: Fr (A) CLIC - 01-OCT-2018 06:56:04 - krips N20E0.3W12W09E16W20N29N11E10 9C Scan Avg. S18A0001 deut 78.500GHz B1 000 000 BOTH polarizations
Ant: Scaled
Pth: Rel.(A) Atm. (38 2432 P FLUX)-(895 3139 P CORR) 29-SEP-2018 13:02-22:36

SHADOW, Ant 5: SHADOW, Ant 6: SHADOW, Ant 7: SHA

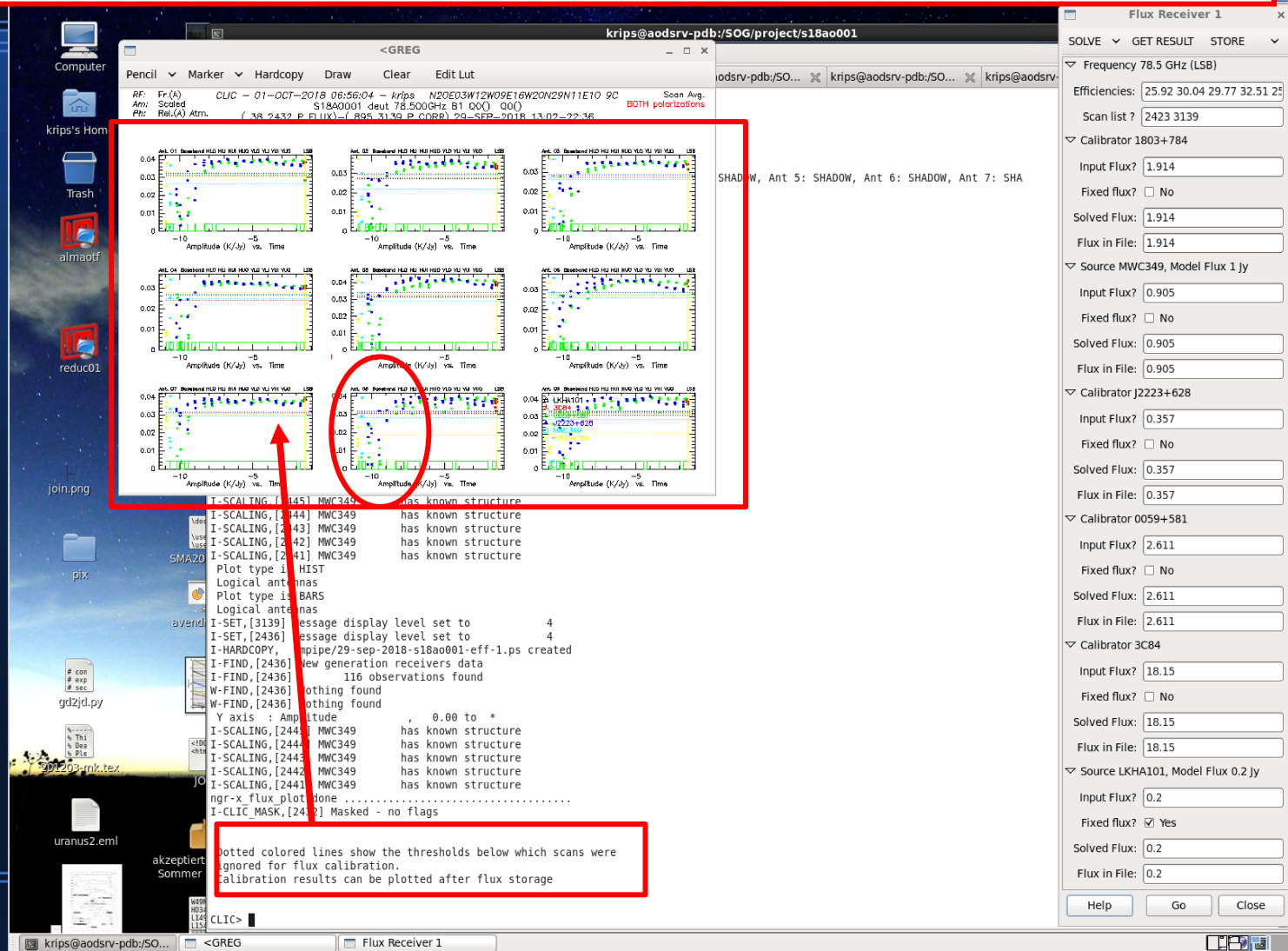
MWC349

LKH a101

I-SCALING, [2445] MWC349 has known structure
I-SCALING, [2444] MWC349 has known structure
I-SCALING, [2443] MWC349 has known structure
I-SCALING, [2442] MWC349 has known structure
I-SCALING, [2441] MWC349 has known structure
Plot type is HIST
Logical antennas
Plot type is BARS
Logical antennas
I-SET, [3139] Message display level set to 4
I-SET, [2436] Message display level set to 4
I-HARDCOPY, tmpipe/29-sep-2018-s18a0001-eff-1.ps created
I-FIND, [2436] New generation receivers data
I-FIND, [2436] 116 observations found
W-FIND, [2436] Nothing found
W-FIND, [2436] Nothing found
Y axis : Amplitude , 0.00 to *
I-SCALING, [2445] MWC349 has known structure
I-SCALING, [2444] MWC349 has known structure
I-SCALING, [2443] MWC349 has known structure
I-SCALING, [2442] MWC349 has known structure
I-SCALING, [2441] MWC349 has known structure
ngr-x flux_plot done
I-CLIC_MASK, [2432] Masked - no flags

Dotted colored lines show the thresholds below which scans were ignored for flux calibration.
Calibration results can be plotted after flux storage

To ignore data for FLUX calibration



The screenshot displays the CLIC software interface. The main window shows a grid of nine plots, each representing a different antenna (Ant. 01 to Ant. 09). Each plot shows Amplitude (K/Jy) vs. Time. A red circle highlights the plot for Ant. 05, which shows a significant amount of data points below the calibration threshold. A red arrow points from this plot to a terminal window below. The terminal window shows the following output:

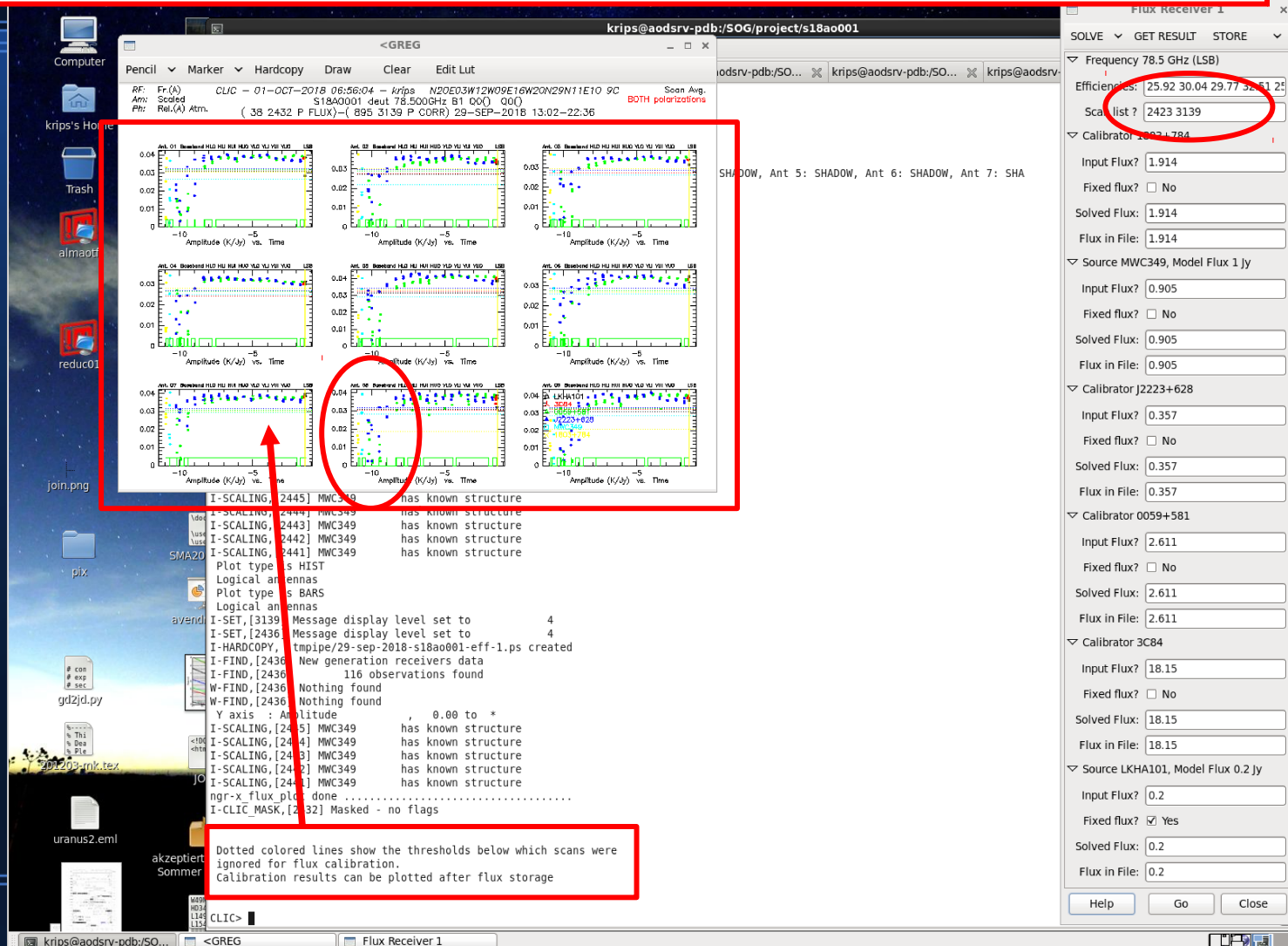
```
I-SCALING, [1445] MWC349 has known structure
I-SCALING, [1444] MWC349 has known structure
I-SCALING, [1443] MWC349 has known structure
I-SCALING, [1442] MWC349 has known structure
I-SCALING, [1441] MWC349 has known structure
Plot type is HIST
Logical antennas
Plot type is BARS
Logical antennas
I-SET, [3139] message display level set to 4
I-SET, [2436] message display level set to 4
I-HARDCOPY, /tmp/29-sep-2018-s18ao001-eff-1.ps created
I-FIND, [2436] New generation receivers data
I-FIND, [2436] 116 observations found
W-FIND, [2436] nothing found
W-FIND, [2436] nothing found
Y axis : Amplitude , 0.00 to *
I-SCALING, [2441] MWC349 has known structure
I-SCALING, [2444] MWC349 has known structure
I-SCALING, [2443] MWC349 has known structure
I-SCALING, [2442] MWC349 has known structure
I-SCALING, [2441] MWC349 has known structure
ngr-x flux_plot done .....
I-CLIC_MASK, [2436] Masked - no flags
```

A red box highlights the following text in the terminal window:

```
otted colored lines show the thresholds below which scans were
ignored for flux calibration.
calibration results can be plotted after flux storage
```

The right-hand side of the interface shows the 'Flux Receiver 1' configuration panel. It includes fields for Frequency (78.5 GHz (LSB)), Efficiencies (25.92 30.04 29.77 32.51 25), Scan list (2423 3139), Calibrator (1803+784), Input Flux (1.914), Fixed flux (No), Solved Flux (1.914), Flux in File (1.914), Source (MWC349, Model Flux 1 Jy), Input Flux (0.905), Fixed flux (No), Solved Flux (0.905), Flux in File (0.905), Calibrator (J2223+628), Input Flux (0.357), Fixed flux (No), Solved Flux (0.357), Flux in File (0.357), Calibrator (0059+581), Input Flux (2.611), Fixed flux (No), Solved Flux (2.611), Flux in File (2.611), Calibrator (3C84), Input Flux (18.15), Fixed flux (No), Solved Flux (18.15), Flux in File (18.15), Source (LKHA101, Model Flux 0.2 Jy), Input Flux (0.2), Fixed flux (Yes), Solved Flux (0.2), Flux in File (0.2). Buttons for Help, Go, and Close are at the bottom.

To ignore data for FLUX calibration



The screenshot displays the CLIC software interface. The main window shows a grid of 12 plots (3 rows by 4 columns) titled "Amplitude (K/J) vs. Time". A red circle highlights the bottom-middle plot, with a red arrow pointing to it. The terminal window below the plots shows the following output:

```
I-SCALING, [2445] MWC349 has known structure
I-SCALING, [2444] MWC349 has known structure
I-SCALING, [2443] MWC349 has known structure
I-SCALING, [2442] MWC349 has known structure
I-SCALING, [2441] MWC349 has known structure
Plot type is HIST
Logical antennas
Plot type is BARS
Logical antennas
I-SET, [3139] Message display level set to 4
I-SET, [2436] Message display level set to 4
I-HARDCOPY, /tmp/pipe/29-sep-2018-s18ao001-eff-1.ps created
I-FIND, [2436] New generation receivers data
I-FIND, [2436] 116 observations found
W-FIND, [2436] Nothing found
W-FIND, [2436] Nothing found
Y axis - Amplitude, 0.00 to *
I-SCALING, [2445] MWC349 has known structure
I-SCALING, [2444] MWC349 has known structure
I-SCALING, [2443] MWC349 has known structure
I-SCALING, [2442] MWC349 has known structure
I-SCALING, [2441] MWC349 has known structure
ngrp-x flux plot done .....
I-CLIC_MASK, [232] Masked - no flags
```

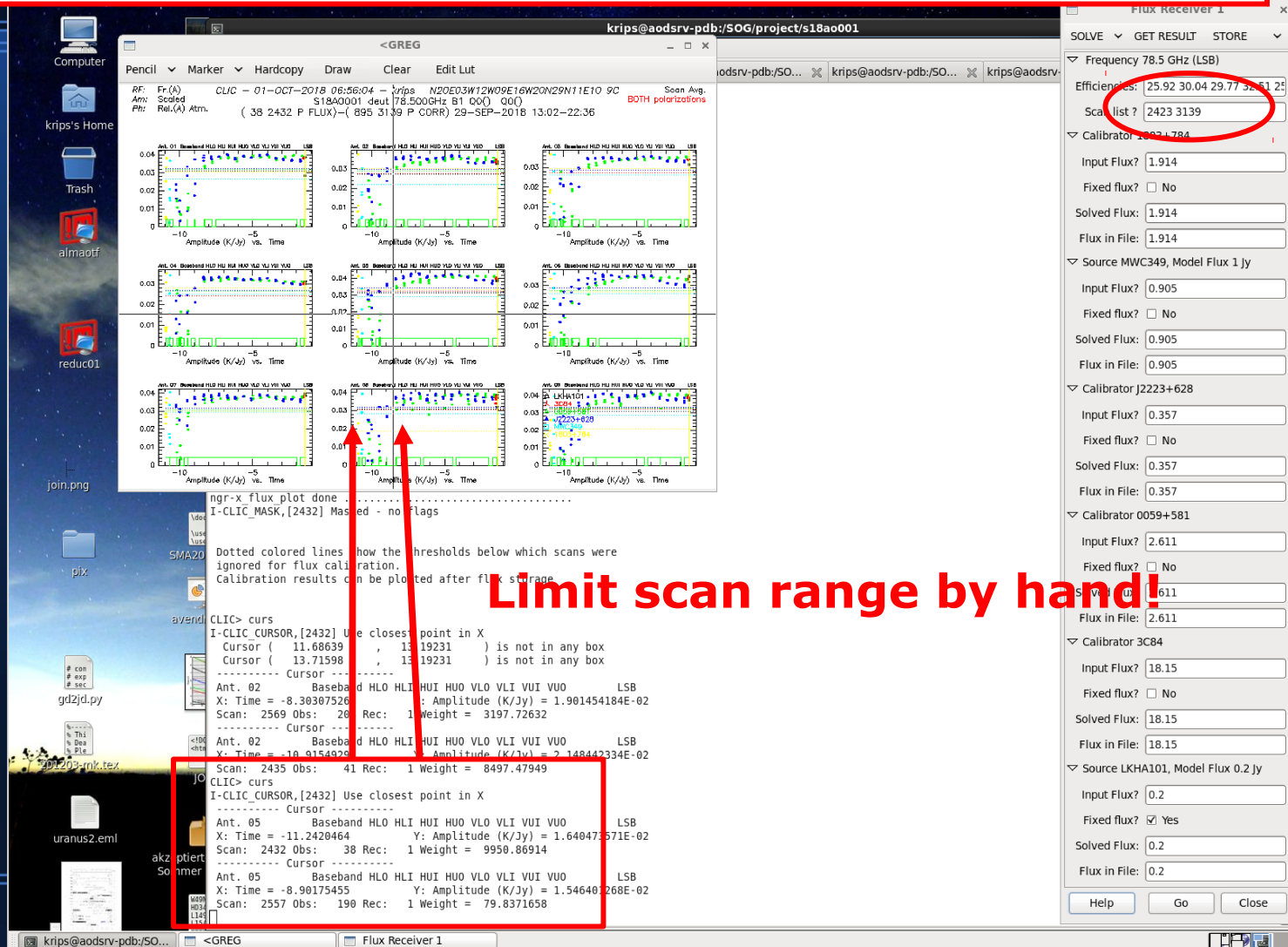
A red box highlights the following text at the bottom of the terminal window:

```
Dotted colored lines show the thresholds below which scans were
ignored for flux calibration.
Calibration results can be plotted after flux storage
```

The "Flux Receiver 1" window on the right shows calibration parameters for three sources. The "Efficiencies" row is circled in red, showing values: 25.92 30.04 29.77 32.51 25.92. The "Sca list" row shows values: 2423 3139.

Source	Model Flux	Input Flux?	Fixed flux?	Solved Flux	Flux in File
MWC349	Model Flux 1 Jy	1.914	No	1.914	1.914
MWC349	Model Flux 1 Jy	0.905	No	0.905	0.905
J2223+628	Model Flux 1 Jy	0.357	No	0.357	0.357
0059+581	Model Flux 1 Jy	2.611	No	2.611	2.611
3C84	Model Flux 1 Jy	18.15	No	18.15	18.15
LKHA101	Model Flux 0.2 Jy	0.2	Yes	0.2	0.2

To ignore data for FLUX calibration



The screenshot displays the CLIC software interface. The main window shows a grid of nine plots, each representing a different scan. The x-axis for all plots is 'Amplitude (K/Jy) vs. Time' and the y-axis is 'LSB'. Two red arrows point to the second plot from the top-left, indicating a scan that should be ignored for flux calibration. A red box highlights the terminal output for this scan, showing the following details:

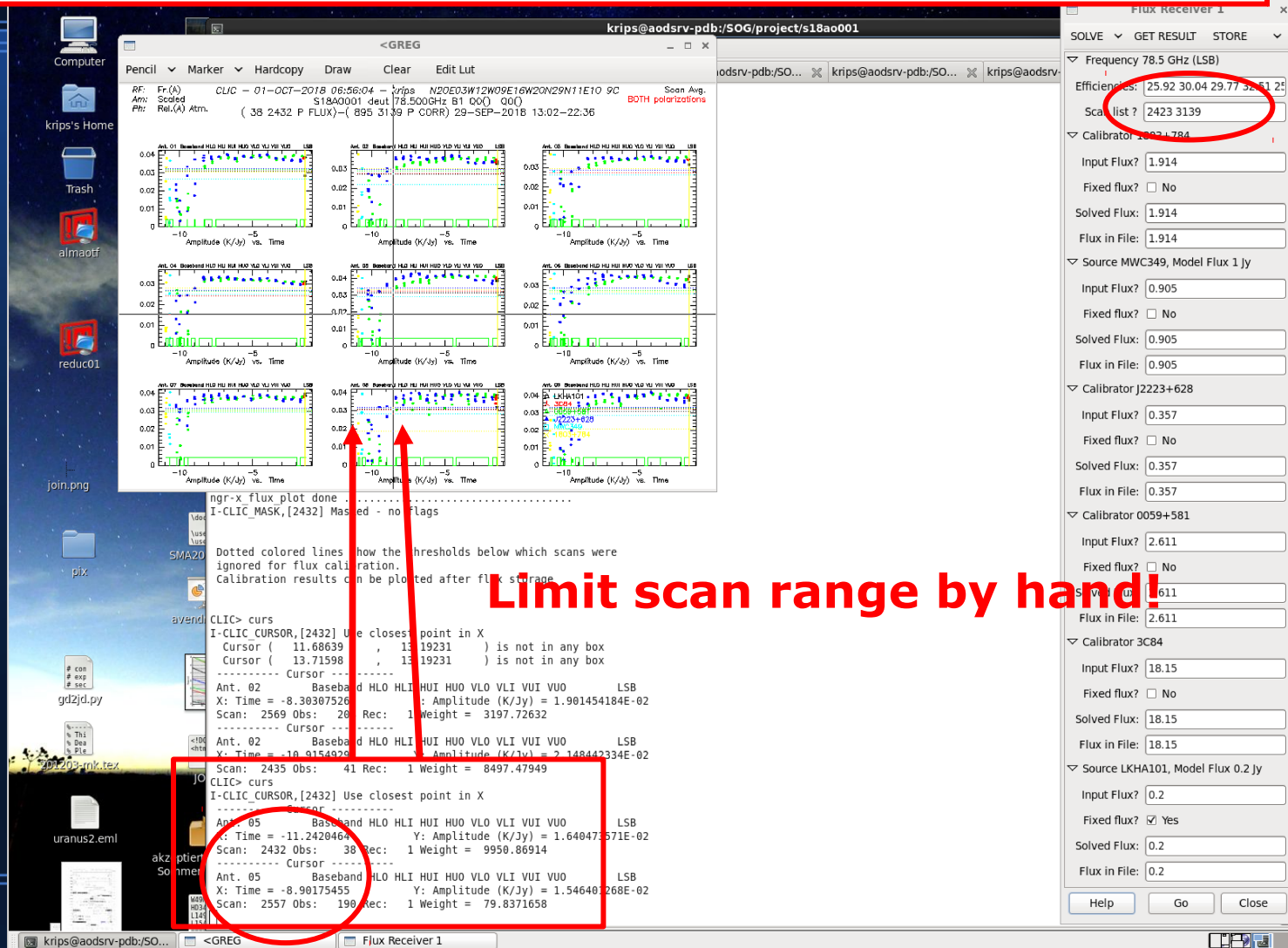
```
Scan: 2435 Obs: 41 Rec: 1 Weight = 8497.47949
CLIC> curs
I-CLIC_CURSOR,[2432] Use closest point in X
----- Cursor -----
Ant. 02 Baseband HLO HLI HUI HUO VLO VLI VUI VUO LSB
X: Time = -8.38387526 Y: Amplitude (K/Jy) = 1.901454184E-02
Scan: 2569 Obs: 20 Rec: 1 Weight = 3197.72632
----- Cursor -----
Ant. 02 Baseband HLO HLI HUI HUO VLO VLI VUI VUO LSB
X: Time = -10.9154026 Y: Amplitude (K/Jy) = 2.148442334E-02
Scan: 2435 Obs: 41 Rec: 1 Weight = 8497.47949
CLIC> curs
I-CLIC_CURSOR,[2432] Use closest point in X
----- Cursor -----
Ant. 05 Baseband HLO HLI HUI HUO VLO VLI VUI VUO LSB
X: Time = -11.2420464 Y: Amplitude (K/Jy) = 1.648473571E-02
Scan: 2432 Obs: 38 Rec: 1 Weight = 9950.86914
----- Cursor -----
Ant. 05 Baseband HLO HLI HUI HUO VLO VLI VUI VUO LSB
X: Time = -8.90175455 Y: Amplitude (K/Jy) = 1.54640268E-02
Scan: 2557 Obs: 190 Rec: 1 Weight = 79.8371658
```

The terminal output also includes a message: "Dotted colored lines show the thresholds below which scans were ignored for flux calibration. Calibration results can be plotted after flux storage."

On the right side of the interface, the 'Flux Receiver 1' panel shows calibration results for various sources. The 'Efficiencies' row is circled in red, showing values: 25.92 30.04 29.77 32.51 25.92. The 'Sca list' row shows values: 2423 3139.

Limit scan range by hand!

To ignore data for FLUX calibration



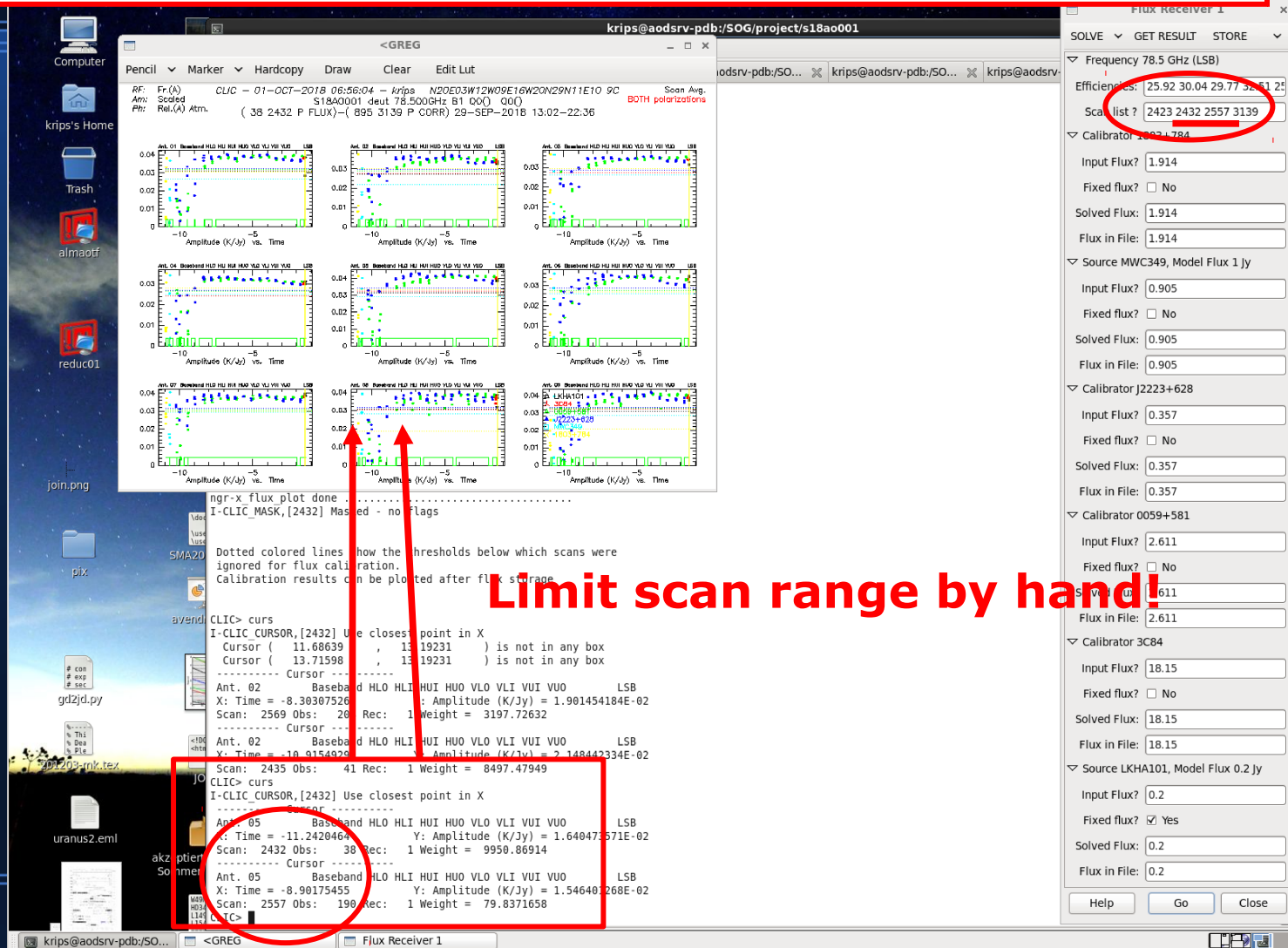
The screenshot displays the CLIC software interface. The main window shows a grid of nine plots, each representing a different scan. The plots show Amplitude (K/Jy) vs. Time. Two red arrows point to the second plot from the top-left, indicating a scan that should be ignored for flux calibration. The terminal window at the bottom shows the following output:

```
CLIC> curs
I-CLIC_CURSOR,[2432] Use closest point in X
Cursor ( 11.68639 , 13.19231 ) is not in any box
Cursor ( 13.71598 , 13.19231 ) is not in any box
----- Cursor -----
Ant. 02 Baseband HLO HLI HUI HUO VLO VLI VUI VUO LSB
X: Time = -8.38387526 Y: Amplitude (K/Jy) = 1.901454184E-02
Scan: 2569 Obs: 20 Rec: 1 Weight = 3197.72632
----- Cursor -----
Ant. 02 Baseband HLO HLI HUI HUO VLO VLI VUI VUO LSB
X: Time = -10.9154026 Y: Amplitude (K/Jy) = 2.148442334E-02
Scan: 2435 Obs: 41 Rec: 1 Weight = 8497.47949
CLIC> curs
I-CLIC_CURSOR,[2432] Use closest point in X
Cursor ( 11.68639 , 13.19231 ) is not in any box
Cursor ( 13.71598 , 13.19231 ) is not in any box
----- Cursor -----
Ant. 05 Baseband HLO HLI HUI HUO VLO VLI VUI VUO LSB
X: Time = -11.2420464 Y: Amplitude (K/Jy) = 1.648473571E-02
Scan: 2432 Obs: 38 Rec: 1 Weight = 9950.86914
----- Cursor -----
Ant. 05 Baseband HLO HLI HUI HUO VLO VLI VUI VUO LSB
X: Time = -8.90175455 Y: Amplitude (K/Jy) = 1.54640268E-02
Scan: 2557 Obs: 190 Rec: 1 Weight = 79.8371658
```

The scan with ID 2432 is circled in red in the terminal output, indicating it should be ignored for flux calibration. The text "Limit scan range by hand!" is overlaid in red on the terminal window.

On the right side of the interface, the "Flux Receiver 1" panel shows calibration results for various sources. The "Efficiencies" row is circled in red, showing values: 25.92 30.04 29.77 32.51 25.92.

To ignore data for FLUX calibration



The screenshot displays the CLIC software interface. The main window shows a grid of nine plots, each representing a different scan. The plots show Amplitude (K/Jy) vs. Time. Two red arrows point to the bottom-left plot, indicating a scan that should be ignored for flux calibration. A red box highlights the terminal output for this scan, showing the following details:

```
Scan: 2432 Obs: 38 Rec: 1 Weight = 9950.86914
Ant. 05 Baseband HLO HLI HUI HUO VLO VLI VUI VUO LSB
X: Time = -11.242046 Y: Amplitude (K/Jy) = 1.64947571E-02
Scan: 2432 Obs: 38 Rec: 1 Weight = 9950.86914
----- Cursor -----
Ant. 05 Baseband HLO HLI HUI HUO VLO VLI VUI VUO LSB
X: Time = -8.90175455 Y: Amplitude (K/Jy) = 1.54640268E-02
Scan: 2557 Obs: 190 Rec: 1 Weight = 79.8371658
CLIC>
```

The terminal output also shows the following information:

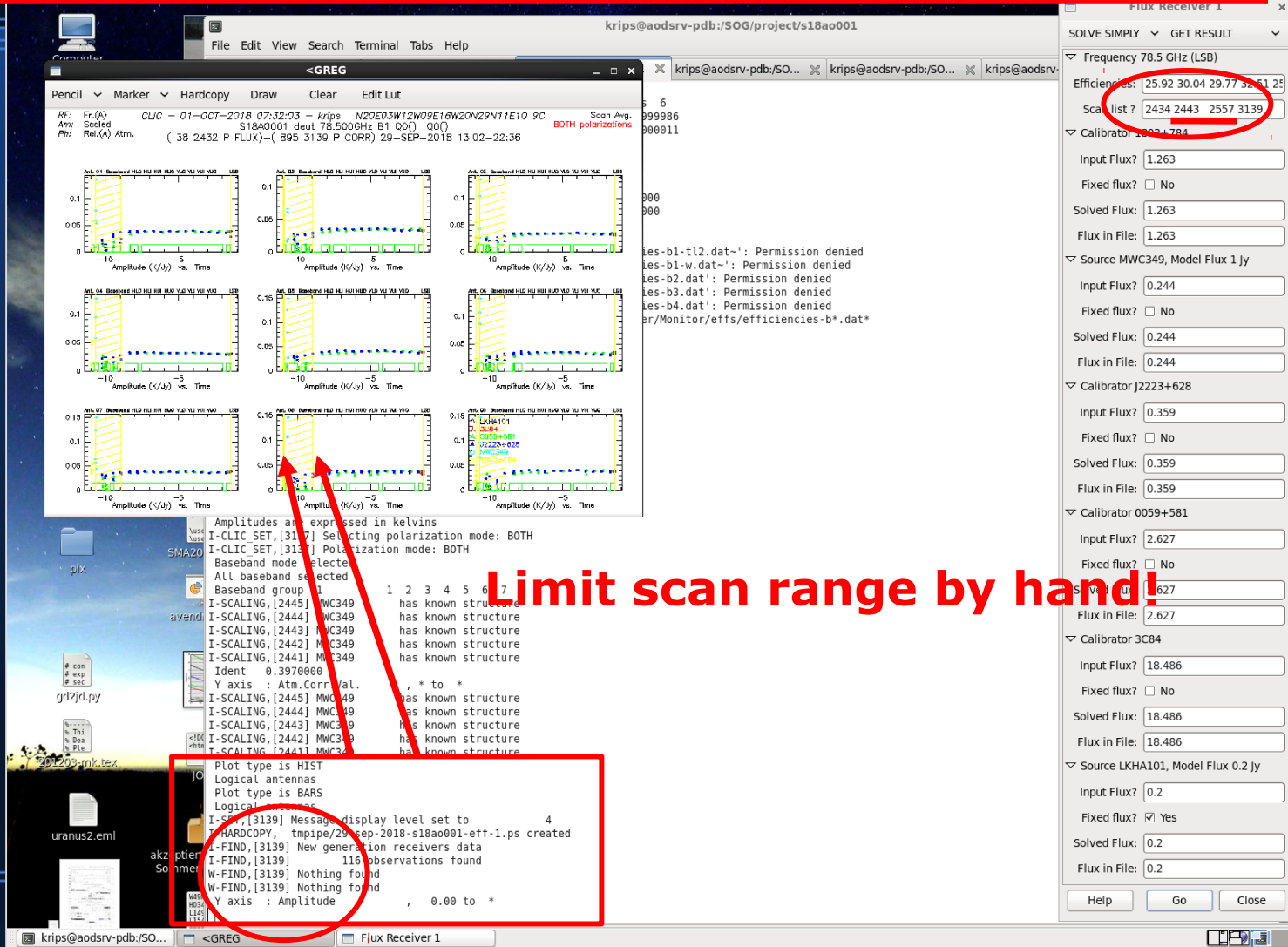
```
Dotted colored lines show the thresholds below which scans were
ignored for flux calibration.
Calibration results can be plotted after flux storage.
CLIC> curs
I-CLIC_CURSOR,[2432] Use closest point in X
Cursor ( 11.68639 , 13.19231 ) is not in any box
Cursor ( 13.71598 , 13.19231 ) is not in any box
----- Cursor -----
Ant. 02 Baseband HLO HLI HUI HUO VLO VLI VUI VUO LSB
X: Time = -8.3087526 Y: Amplitude (K/Jy) = 1.901454184E-02
Scan: 2569 Obs: 20 Rec: 1 Weight = 3197.72632
----- Cursor -----
Ant. 02 Baseband HLO HLI HUI HUO VLO VLI VUI VUO LSB
X: Time = -10.9154026 Y: Amplitude (K/Jy) = 2.148442334E-02
Scan: 2435 Obs: 41 Rec: 1 Weight = 8497.47949
CLIC> curs
I-CLIC_CURSOR,[2432] Use closest point in X
Cursor ( 11.68639 , 13.19231 ) is not in any box
Cursor ( 13.71598 , 13.19231 ) is not in any box
----- Cursor -----
Ant. 05 Baseband HLO HLI HUI HUO VLO VLI VUI VUO LSB
X: Time = -11.242046 Y: Amplitude (K/Jy) = 1.64947571E-02
Scan: 2432 Obs: 38 Rec: 1 Weight = 9950.86914
----- Cursor -----
Ant. 05 Baseband HLO HLI HUI HUO VLO VLI VUI VUO LSB
X: Time = -8.90175455 Y: Amplitude (K/Jy) = 1.54640268E-02
Scan: 2557 Obs: 190 Rec: 1 Weight = 79.8371658
CLIC>
```

The right-hand side of the interface shows the 'Flux Receiver 1' window, which displays the calibration results for various sources. The 'Efficiencies' table is circled in red, showing the following values:

Source	Efficiency			
25.92	30.04	29.77	32.51	25.92
2423	2432	2557	3139	

The 'Limit scan range by hand!' text is overlaid in red on the terminal window.

To ignore data for FLUX calibration

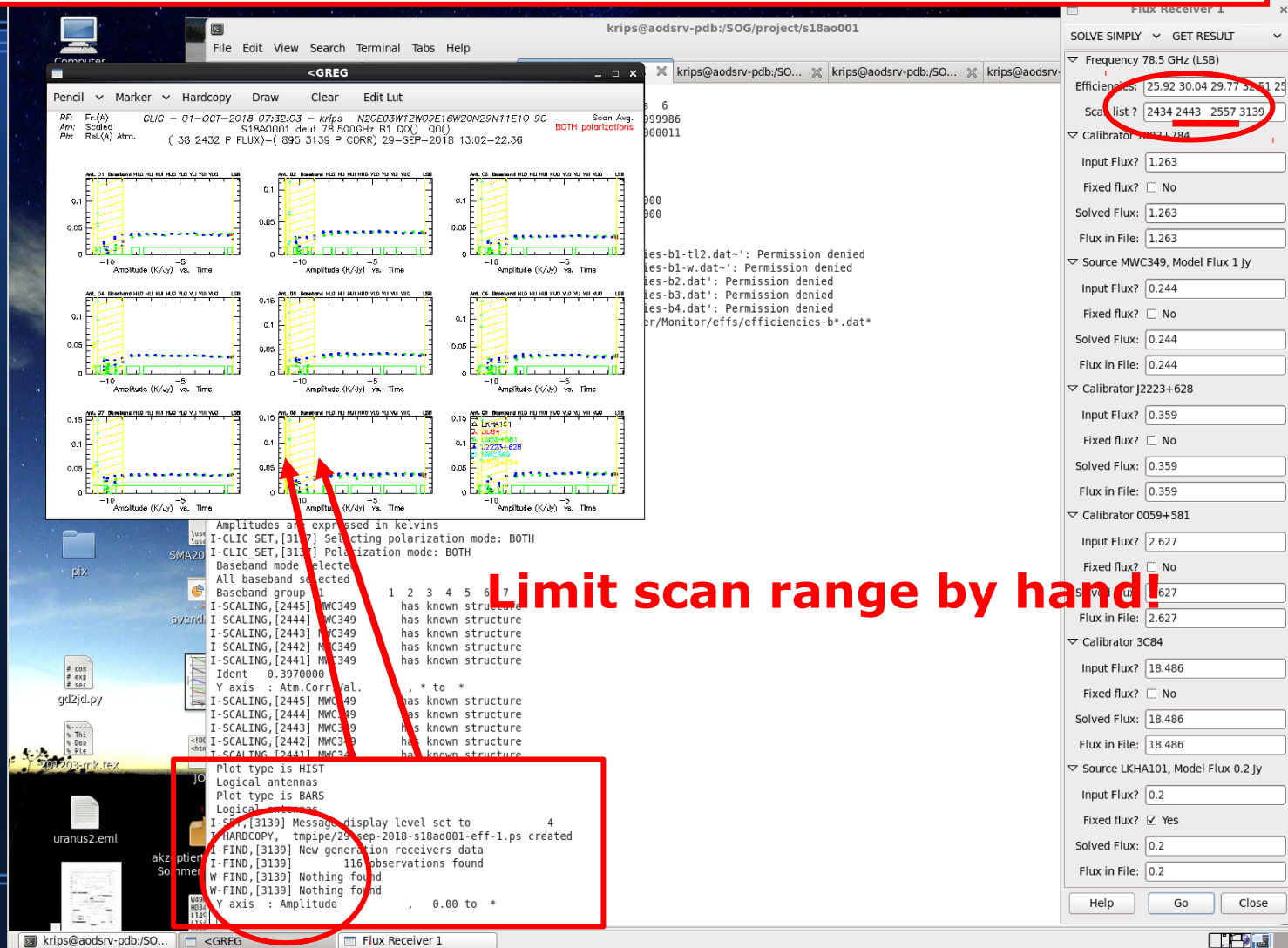


The screenshot displays the CLIC software interface. The main window shows a grid of plots for different receivers (REC 01 to REC 07). The terminal window at the bottom contains the following text:

```
Amplitudes are expressed in kelvins  
I-CLIC SET, [317] Selecting polarization mode: BOTH  
I-CLIC SET, [317] Polarization mode: BOTH  
Baseband mode selected  
All baseband selected  
Baseband group 1  
I-SCALING, [2445] MWC349 has known structure  
I-SCALING, [2444] MWC349 has known structure  
I-SCALING, [2443] MWC349 has known structure  
I-SCALING, [2442] MWC349 has known structure  
I-SCALING, [2441] MWC349 has known structure  
Ident. 0.3970000  
Y axis : Atm. Corr./val. , * to *  
I-SCALING, [2445] MWC349 has known structure  
I-SCALING, [2444] MWC349 has known structure  
I-SCALING, [2443] MWC349 has known structure  
I-SCALING, [2442] MWC349 has known structure  
I-SCALING, [2441] MWC349 has known structure  
Plot type is HIST  
Logical antennas  
Plot type is BARS  
Logical antennas  
I-SP, [3139] Message display level set to 4  
I-HARDCOPY, [tmpipe/29-sep-2018-s18a001-eff-1.ps created  
I-FIND, [3139] New generation receivers data  
I-FIND, [3139] 116 observations found  
W-FIND, [3139] Nothing found  
W-FIND, [3139] Nothing found  
Y axis : Amplitude , 0.00 to *
```

A red circle highlights the terminal output for the 'I-FIND' command, indicating that 116 observations were found. A red arrow points from this circle to the 'Solved Flux' field in the 'Flux Receiver 1' panel, which is currently set to 1.263. The 'Flux Receiver 1' panel also shows a 'Sca list' with values 2434, 2443, 2557, and 3139, where 2434 and 2443 are circled in red. A red box highlights the 'Limit scan range by hand!' text in the center of the image.

To ignore data for FLUX calibration



The screenshot displays the CLIC software interface. A terminal window in the foreground shows the following output:

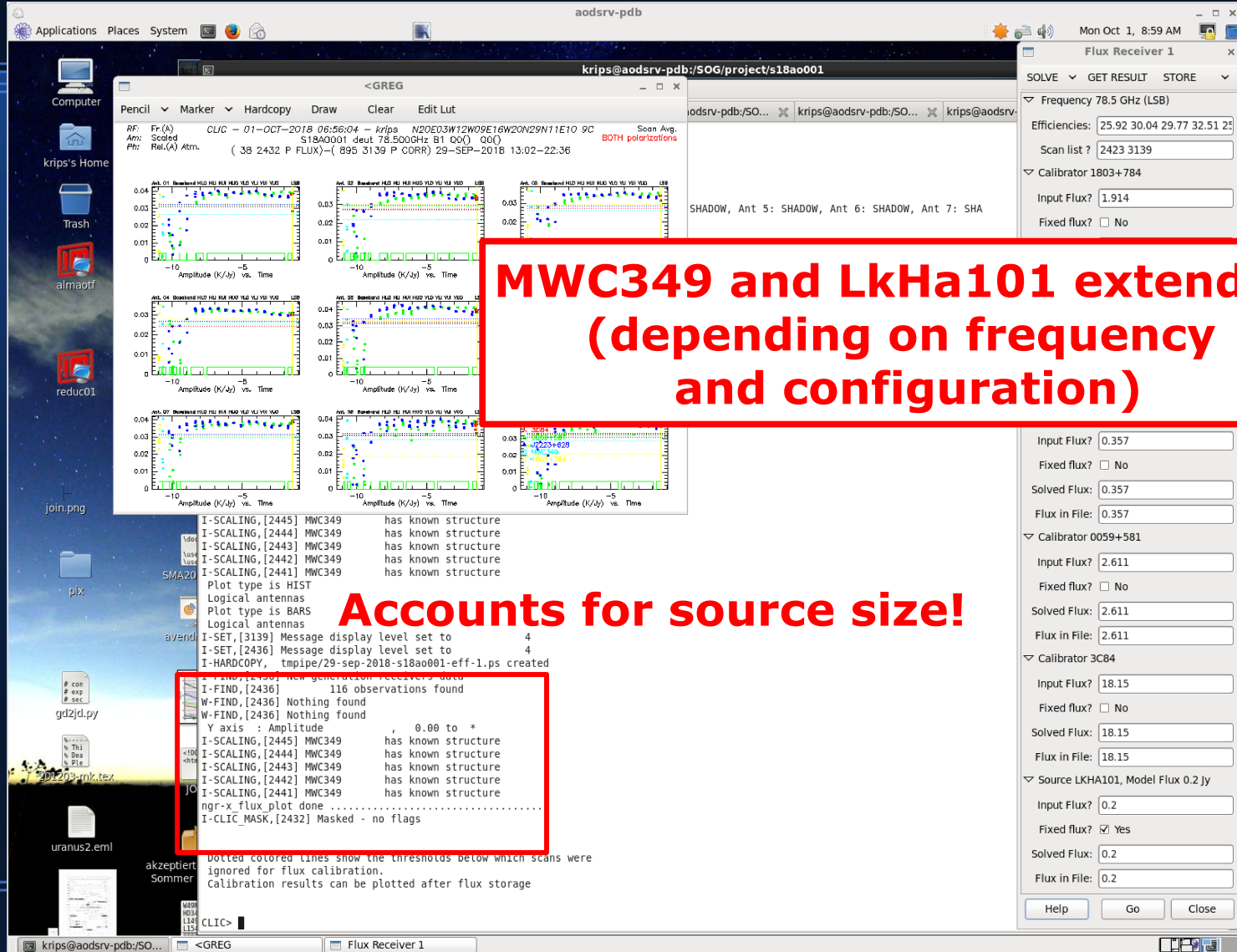
```
Amplitudes are expressed in kelvins
I-CLIC SET, [317] Selecting polarization mode: BOTH
I-CLIC SET, [317] Polarization mode: BOTH
Baseband mode selected
All baseband selected
Baseband group 1
I-SCALING, [2445] MWC349 has known structure
I-SCALING, [2444] MWC349 has known structure
I-SCALING, [2443] MWC349 has known structure
I-SCALING, [2442] MWC349 has known structure
I-SCALING, [2441] MWC349 has known structure
Ident. 0.3970000
Y axis : Atm. Corr./val. , * to *
I-SCALING, [2445] MWC349 has known structure
I-SCALING, [2444] MWC349 has known structure
I-SCALING, [2443] MWC349 has known structure
I-SCALING, [2442] MWC349 has known structure
I-SCALING, [2441] MWC349 has known structure
Plot type is HIST
Logical antennas
Plot type is BARS
Logical antennas
I-SP, [3139] Message display level set to 4
HARDCOPY, tmpipe/29-sep-2018-s18a001-eff-1.ps created
I-FIND, [3139] New generation receivers data
I-FIND, [3139] 116 observations found
W-FIND, [3139] Nothing found
W-FIND, [3139] Nothing found
Y axis : Amplitude , 0.00 to *
```

A red box highlights the 'I-FIND, [3139] Nothing found' message. A red arrow points from the text 'Limit scan range by hand!' to this message. The 'Flux Receiver 1' window on the right shows a table of efficiency values:

Efficiency	25.92	30.04	29.77	32.51	25.92
Scale list ?	2434	2443	2557	3139	

The first row of the table is circled in red.

Practical Tips: CLIC software tools



The screenshot displays the CLIC software interface. At the top, a terminal window shows the following information:

```
RF: Fr (A) CLIC - 01-OCT-2018 06:56:04 - krips N20E0.3W12W09E16W20N29N11E10 9C Scan Avg.  
Am: Scaded S18A0001 deut 78.500GHz B1 000 000 BOTH polarizations  
Pth: Rel.(A) Atm. ( 38 2432 P FLUX)-( 895 3139 P CORR) 29-SEP-2018 13:02-22:36
```

Below the terminal, several plots show Amplitude (K/Jy) vs. Time for various antennas (Ant 01 to Ant 07). A red text box highlights the following text:

**MWC349 and LkHa101 extended
(depending on frequency
and configuration)**

The terminal output includes a list of sources and their structures:

```
I-SCALING, [2445] MWC349 has known structure  
I-SCALING, [2444] MWC349 has known structure  
I-SCALING, [2443] MWC349 has known structure  
I-SCALING, [2442] MWC349 has known structure  
I-SCALING, [2441] MWC349 has known structure
```

Below this, the terminal shows the following text:

```
Plot type is HIST  
Logical antennas  
Plot type is BARS  
Logical antennas  
I-SET, [3139] Message display level set to 4  
I-SET, [2436] Message display level set to 4  
I-HARDCOPY, tmpipe/29-sep-2018-s18a0001-eff-1.ps created
```

A red text box highlights the following text:

Accounts for source size!

The terminal output continues with the following text:

```
I-FIND, [2436] New generation receivers data  
I-FIND, [2436] 116 observations found  
W-FIND, [2436] Nothing found  
W-FIND, [2436] Nothing found  
Y axis : Amplitude  
I-SCALING, [2445] MWC349 has known structure  
I-SCALING, [2444] MWC349 has known structure  
I-SCALING, [2443] MWC349 has known structure  
I-SCALING, [2442] MWC349 has known structure  
I-SCALING, [2441] MWC349 has known structure  
ngr-x flux plot done .....  
I-CLIC_MASK, [2432] Masked - no flags
```

At the bottom of the terminal, the following text is visible:

```
Dotted colored lines show the thresholds below which scans were  
ignored for flux calibration.  
Calibration results can be plotted after flux storage
```

The interface also shows a 'Flux Receiver 1' window with the following settings:

- SOLVE GET RESULT STORE
- Frequency 78.5 GHz (LSB)
- Efficiencies: 25.92 30.04 29.77 32.51 25
- Scan list ? 2423 3139
- Calibrator 1803+784
- Input Flux? 1.914
- Fixed flux? No

Below this, another 'Flux Receiver 1' window shows the following settings:

- Input Flux? 0.357
- Fixed flux? No
- Solved Flux: 0.357
- Flux in File: 0.357
- Calibrator 0059+581
- Input Flux? 2.611
- Fixed flux? No
- Solved Flux: 2.611
- Flux in File: 2.611
- Calibrator 3C84
- Input Flux? 18.15
- Fixed flux? No
- Solved Flux: 18.15
- Flux in File: 18.15
- Source LKHA101, Model Flux 0.2 Jy
- Input Flux? 0.2
- Fixed flux? Yes
- Solved Flux: 0.2
- Flux in File: 0.2

Buttons: Help Go Close

Practical Tips: CLIC software tools

The screenshot displays the CLIC software interface. The main window shows a list of antennas and their efficiencies. A red box highlights the following table:

Antenna	Efficiency (Jy/K)	Efficiency (%)
Antenna 1 (A 1)	25.9	0.84
Antenna 2 (A 2)	30.0	0.73
Antenna 3 (A 3)	29.8	0.73
Antenna 4 (A 4)	32.5	0.67
Antenna 5 (A 5)	25.8	0.85
Antenna 6 (A 6)	29.4	0.74
Antenna 7 (A 7)	25.8	0.85
Antenna 8 (A 8)	27.9	0.78
Antenna 9 (A10)	26.6	0.82

A second red box highlights the 'Flux Receiver 1' window, which shows the following efficiency values for a 78.5 GHz (LSB) source:

Efficiency
25.92
30.04
29.77
32.51

The text 'Check Antenna Efficiencies! (however, only a guideline!)' is overlaid in red on the main window.

Practical Tips: CLIC software tools

**Check source fluxes!
(ask SOG for flux data
base in case of doubts)**

Source	read	found	model
1803+784	1.26 Jy	1.91 Jy	
MWC349	0.24 Jy	0.91 Jy	(model: 1 Jy)
2223+628	0.36 Jy	0.36 Jy	
0059+581	2.63 Jy	2.61 Jy	
3C84	18.49 Jy	18.15 Jy	
LKHA101	0.20 Jy	0.20 Jy	(model: 0.2 Jy)

Antenna 1 (A 1) 25.9 Jy/K (0.64)
Antenna 2 (A 2) 30.0 Jy/K (0.73)
Antenna 3 (A 3) 29.8 Jy/K (0.73)
Antenna 4 (A 4) 32.5 Jy/K (0.67)
Antenna 5 (A 5) 25.8 Jy/K (0.85)
Antenna 6 (A 6) 29.4 Jy/K (0.74)
Antenna 7 (A 7) 25.8 Jy/K (0.85)
Antenna 8 (A 8) 27.9 Jy/K (0.78)
Antenna 9 (A10) 26.6 Jy/K (0.82)

```
ISB = -1 ! Integer GLOBAL
CAL_FLUX[,FREQ] is a double precision Sub-Array of dimensions 6
  1.91400000000000015  0.90500000000000027  0.35699999999999984
  2.61100000000000021  18.150000000000021  0.20000000000000011
OTHER SOLVED_FLUX is a real Array of dimensions 6
  1.937000  1.063000  0.3370000  2.468000  16.81400
  0.2300000
CAL_SOURCE is a character*20 Array of dimensions 6
  1803+784
  MWC349
  J2223+628
  0059+581
  3C84
  LKHA101
SPEC_INDEX_FACTOR2 is a real Array of dimensions 6
  1.012017  1.174586  0.9439777  0.9452317  0.9263911
  1.150000
ngr-x flux solve done .....
Phases are Degrees Continuous 10
I-CLIC_MASK,[2435] Masked - Ant 1: SHADOW, Ant 2: SHADOW, Ant 3: SHADOW, Ant 4: SHADOW, Ant 5: SHADOW, Ant 6: SHADOW, Ant 7: SHA
I-CLIC_MASK,[2435] DOW, Ant 8: SHADOW, Ant 9: SHADOW, Ant 10 SHADOW
Plot type is BARS
Logical antennas
I-SET, Clearing the tree and resetting BOX_LOCATION
W-FIND,[2435] Nothing found
W-FIND,[2435] Nothing found
```

Flux Receiver 1

SOLVE GET RESULT STORE

Frequency 78.5 GHz (LSB)

Efficiencies: 25.92 30.04 29.77 32.51 25

Scan list ? 2423 3139

Calibrator 1803+784

Input Flux? 1.263

Fixed flux? No

Solved Flux: 1.914

Flux in File: 1.263

Source MWC349, Model Flux 1 Jy

Input Flux? 0.244

Fixed flux? No

Solved Flux: 0.905

Flux in File: 0.244

Calibrator 0059+581

Input Flux? 0.359

Fixed flux? No

Solved Flux: 0.357

Flux in File: 0.359

Calibrator 3C84

Input Flux? 18.486

Fixed flux? No

Solved Flux: 18.15

Flux in File: 18.486

Source LKHA101, Model Flux 0.2 Jy

Input Flux? 0.2

Fixed flux? Yes

Solved Flux: 0.2

Flux in File: 0.2

Help Go Close

Practical Tips: CLIC software tools

**Check source fluxes!
(ask SOG for flux data
base in case of doubts)**

Source	read	found	model
1803+784	1.26 Jy	1.91 Jy	
MWC349	0.24 Jy	0.91 Jy	1 Jy
2223+628	0.36 Jy	0.36 Jy	
0059+581	2.63 Jy	2.61 Jy	
3C84	18.49 Jy	18.15 Jy	
LKHA101	0.20 Jy	0.20 Jy	0.2 Jy

Antenna 1 (A 1) 25.9 Jy/K (0.64)
Antenna 2 (A 2) 30.0 Jy/K (0.73)
Antenna 3 (A 3) 29.8 Jy/K (0.73)
Antenna 4 (A 4) 32.5 Jy/K (0.67)
Antenna 5 (A 5) 25.8 Jy/K (0.85)
Antenna 6 (A 6) 29.4 Jy/K (0.74)
Antenna 7 (A 7) 25.8 Jy/K (0.85)
Antenna 8 (A 8) 27.9 Jy/K (0.78)
Antenna 9 (A10) 26.6 Jy/K (0.82)

```
ISB = -1 ! Integer GLOBAL
CAL_FLUX[,FREQ] is a double precision Sub-Array of dimensions 6
  1.91400000000000015  0.90500000000000027  0.35699999999999984
  2.61100000000000021  18.150000000000021  0.20000000000000011
OTHER SOLVED_FLUX is a real Array of dimensions 6
  1.937000  1.063000  0.3370000  2.468000  16.81400
  0.2300000
CAL_SOURCE is a character*20 Array of dimensions 6
  1803+784
  MWC349
  J2223+628
  0059+581
  3C84
  LKHA101
SPEC_INDEX_FACTOR2 is a real Array of dimensions 6
  1.012017  1.174586  0.9439777  0.9452317  0.9263911
  1.150000
ngr-x flux solve done .....
Phases are Degrees Continuous 10
I-CLIC_MASK,[2435] Masked - Ant 1: SHADOW, Ant 2: SHADOW, Ant 3: SHADOW, Ant 4: SHADOW, Ant 5: SHADOW, Ant 6: SHADOW, Ant 7: SHA
I-CLIC_MASK,[2435] DOW, Ant 8: SHADOW, Ant 9: SHADOW, Ant 10 SHADOW
Plot type is BARS
Logical antennas
I-SET, Clearing the tree and resetting BOX_LOCATION
W-FIND,[2435] Nothing found
W-FIND,[2435] Nothing found
```

Flux Receiver 1

SOLVE GET RESULT STORE

Frequency 78.5 GHz (LSB)

Efficiencies: 25.92 30.04 29.77 32.51 25

Scan list ? 2423 3139

Calibrator 1803+784

Input Flux? 1.263

Fixed flux? No

Solved Flux: 1.914

Flux in File: 1.263

Source MWC349, Model Flux 1 Jy

Input Flux? 0.244

Fixed flux? No

Solved Flux: 0.905

Flux in File: 0.244

Calibrator 0059+581

Input Flux? 0.359

Fixed flux? No

Solved Flux: 0.357

Flux in File: 0.359

Calibrator 3C84

Input Flux? 18.486

Fixed flux? No

Solved Flux: 18.15

Flux in File: 18.486

Source LKHA101, Model Flux 0.2 Jy

Input Flux? 0.2

Fixed flux? Yes

Solved Flux: 0.2

Flux in File: 0.2

Help Go Close

Practical Tips: CLIC software tools

The screenshot displays the CLIC software interface on a Linux desktop. The main window is a terminal window titled 'krips@aodsvr-pdb:/SOG/project/s18ao001'. The terminal output shows the following information:

```
SPEC INDEX FACTOR2 is a real Array of dimensions 6
1.012017 1.174586 0.9439777 0.9452317 0.9263911
1.150000
ngra-x flux solve done .....
Phases are Degrees Continuous 10
I-CLIC MASK,[2435] Masked - Ant 1: SHADOW, Ant 2: SHADOW, Ant 3: SHADOW, Ant 4: SHADOW, Ant 5: SHADOW, Ant 6: SHADOW, Ant 7: SHA
I-CLIC MASK,[2435] DOW, Ant 8: SHADOW, Ant 9: SHADOW, Ant 10 SHADOW
Plot type is BARS
Logical antennas
I-SET, Clearing the tree and resetting BOX_LOCATION
W-FIND,[2435] Nothing found
W-FIND,[2435] Nothing found
X axis : Time , = to =
Y axis : Amplitude , = 0.00 to *
Amplitudes are absolute
Amplitude Calibration is antenna-based
Amplitudes are divided by assumed calibrator flux
Amplitudes are expressed in kelvins
I-CLIC_SET,[2435] Selecting polarization mode: BOTH
I-CLIC_SET,[2435] Polarization mode: BOTH
Baseband mode selected
All baseband selected
Baseband group 1 : 1 2 3 4 5 6 7 8
I-SCALING,[2444] MWC349 has known structure
I-SCALING,[2443] MWC349 has known structure
I-SCALING,[2442] MWC349 has known structure
I-SCALING,[2441] MWC349 has known structure
Ident 0.3970000
Y axis : Atm.Corr.Val. , * to *
I-SCALING,[2445] MWC349 has known structure
I-SCALING,[2444] MWC349 has known structure
I-SCALING,[2443] MWC349 has known structure
I-SCALING,[2442] MWC349 has known structure
I-SCALING,[2441] MWC349 has known structure
Plot type is HIST
Logical antennas
Plot type is BARS
Logical antennas
I-SET,[3139] Message display level set to 4
I-SET,[2436] Message display level set to 4
I-HARDCOPY, tmpipe/29-sep-2018-s18ao001-eff-1.ps created
I-FIND,[2436] New generation receivers data
I-FIND,[2436] 116 observations found
W-FIND,[2436] Nothing found
W-FIND,[2436] Nothing found
Y axis : Amplitude , = 0.00 to *
I-SCALING,[2445] MWC349 has known structure
I-SCALING,[2444] MWC349 has known structure
I-SCALING,[2443] MWC349 has known structure
I-SCALING,[2442] MWC349 has known structure
I-SCALING,[2441] MWC349 has known structure
ngra-x flux plot done .....
I-CLIC_MASK,[2465] Masked - no flags
```

Below the terminal output, there is a note: "Dotted colored lines show the thresholds below which scans were ignored for flux calibration. Calibration results can be plotted after flux storage."

On the left side of the terminal window, there are three plots showing Amplitude (K/Jy) vs. Time. The plots are labeled 'Ant 01', 'Ant 04', and 'Ant 07'. The y-axis ranges from 0 to 0.1 K/Jy, and the x-axis ranges from -10 to 5. The plots show a series of data points with error bars and a fitted curve.

On the right side of the terminal window, there is a 'Flux Receiver 1' window. This window displays a list of receivers and their respective flux values. The receivers are grouped by calibrator. The flux values are as follows:

Calibrator	Input Flux?	Fixed flux?	Solved Flux?	Flux in File?
1803+784	1.914	No	1.914	1.263
MWC349, Model Flux 0.2 jy	0.905	No	0.905	0.244
1232+638	0.357	No	0.357	0.359
0059+581	2.611	No	2.611	2.627
3C84	18.15	No	18.15	18.486
LKHA101, Model Flux 0.2 jy	0.2	Yes	0.2	0.2

Red arrows point to the 'Input Flux?' and 'Flux in File?' fields for each receiver group.

Practical Tips: CLIC software tools

Terminal Output:

```
FILE INDEX FACTOR2 is a real Array of dimensions 6
1.012017 1.174586 0.9439777 0.9452317 0.9263911
1.150000
ngrp_x flux solve done .....
Phases are Degrees Continuous 10
I-CLIC MASK,[2435] Masked - Ant 1: SHADOW, Ant 2: SHADOW, Ant 3: SHADOW, Ant 4: SHADOW, Ant 5: SHADOW, Ant 6: SHADOW, Ant 7: SHA
I-CLIC MASK,[2435] DOW, Ant 8: SHADOW, Ant 9: SHADOW, Ant 10 SHADOW
Plot type is BARS
Logical antennas
I-SET, Clearing the tree and resetting BOX_LOCATION
W-FIND,[2435] Nothing found
W-FIND,[2435] Nothing found
X axis : Time , = to =
Y axis : Amplitude , = 0.00 to *
Amplitudes are absolute
Amplitude Calibration is antenna-based
Amplitudes are divided by assumed calibrator flux
Amplitudes are expressed in kelvins
I-CLIC_SET,[2435] Selecting polarization mode: BOTH
I-CLIC_SET,[2435] Polarization mode: BOTH
Baseband mode selected
All baseband selected
Baseband group 1 : 1 2 3 4 5 6 7 8
I-SCALING,[2444] MWC349 has known structure
I-SCALING,[2443] MWC349 has known structure
I-SCALING,[2442] MWC349 has known structure
I-SCALING,[2441] MWC349 has known structure
Ident 0.3970000
Y axis : Atm.Corr.Val. , * to *
I-SCALING,[2445] MWC349 has known structure
I-SCALING,[2444] MWC349 has known structure
I-SCALING,[2443] MWC349 has known structure
I-SCALING,[2442] MWC349 has known structure
I-SCALING,[2441] MWC349 has known structure
Plot type is HIST
Logical antennas
Plot type is BARS
Logical antennas
I-SET,[3139] Message display level set to 4
I-SET,[2436] Message display level set to 4
I-HARDCOPY, tmpipe/29-sep-2018-s18ao001-eff-1.ps created
I-FIND,[2436] New generation receivers data
I-FIND,[2436] 116 observations found
W-FIND,[2436] Nothing found
W-FIND,[2436] Nothing found
Y axis : Amplitude , = 0.00 to *
I-SCALING,[2445] MWC349 has known structure
I-SCALING,[2444] MWC349 has known structure
I-SCALING,[2443] MWC349 has known structure
I-SCALING,[2442] MWC349 has known structure
I-SCALING,[2441] MWC349 has known structure
ngrp_x flux plot done .....
I-CLIC_MASK,[2465] Masked - no flags

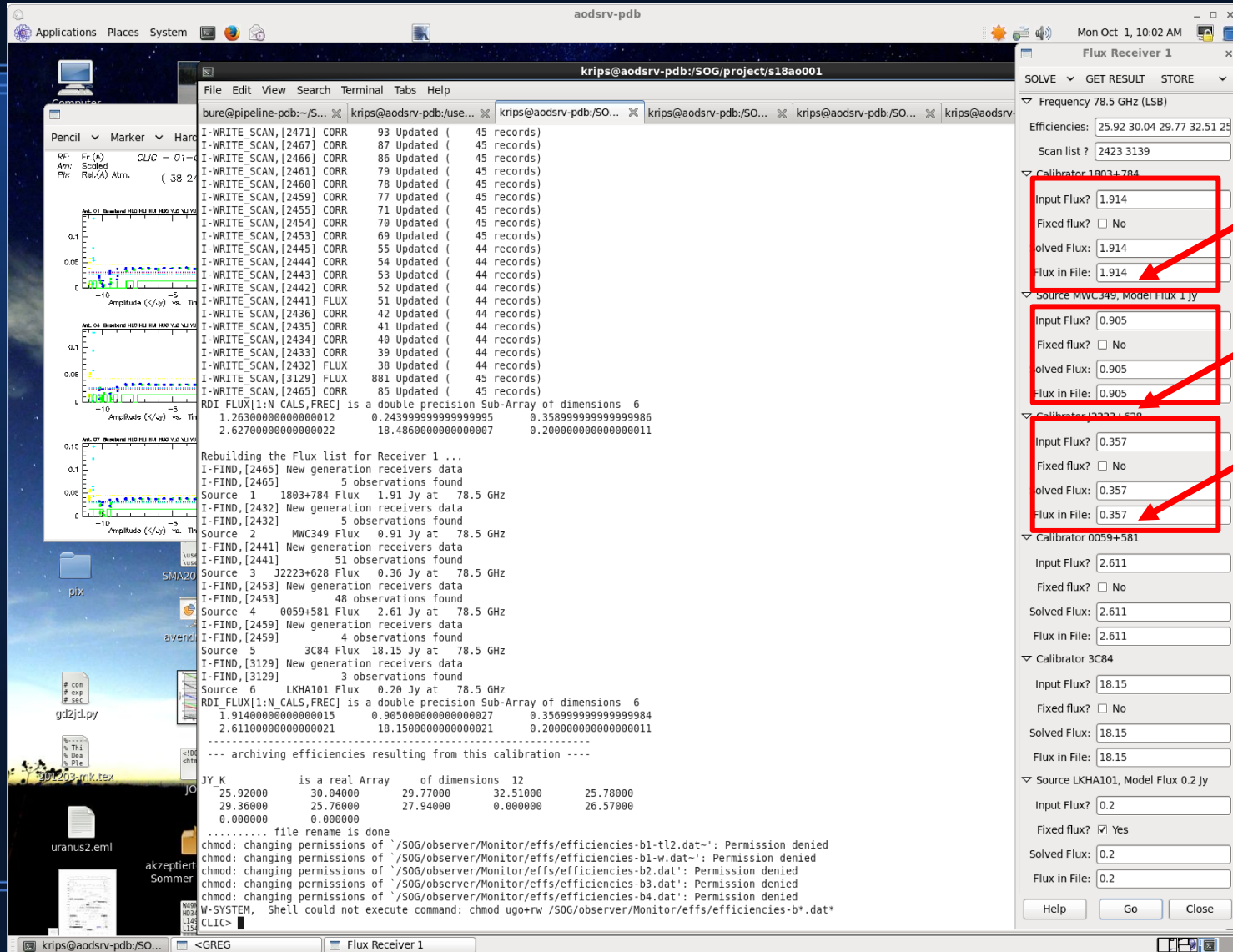
Dotted colored lines show the thresholds below which scans were
ignored for flux calibration.
Calibration results can be plotted after flux storage

CLIC>
CLIC>
```

Flux Receiver 1 Window:

- Frequency 78.5 GHz (LSB)
- Efficiencies: 25.92 30.04 29.77 32.51 25
- Scan list ? 2423 3139
- Calibrator 1803+784
 - Input Flux? 1.914
 - Fixed flux? No
 - Solved Flux: 1.914
 - Flux in File: 1.263
- Source MWC349, Model Flux 0.2 jy
 - Input Flux? 0.905
 - Fixed flux? No
 - Solved Flux: 0.905
 - Flux in File: 0.244
- Calibrator 1333+638
 - Input Flux? 0.357
 - Fixed flux? No
 - Solved Flux: 0.357
 - Flux in File: 0.359
- Calibrator 0059+581
 - Input Flux? 2.611
 - Fixed flux? No
 - Solved Flux: 2.611
 - Flux in File: 2.627
- Calibrator 3C84
 - Input Flux? 18.15
 - Fixed flux? No
 - Solved Flux: 18.15
 - Flux in File: 18.486
- Source LKHA101, Model Flux 0.2 jy
 - Input Flux? 0.2
 - Fixed flux? Yes
 - Solved Flux: 0.2
 - Flux in File: 0.2

Practical Tips: CLIC software tools



The screenshot displays a Linux desktop environment with a terminal window and a GUI application. The terminal window shows the output of a CLIC calibration process, including efficiency calculations and flux measurements for various sources. The GUI application, titled "Flux Receiver 1", shows a list of sources with their respective flux values and efficiency settings. Red boxes and arrows highlight specific flux values in both the terminal and the GUI.

```
Terminal Output:
```

```
... I-WRITE SCAN, [2471] CORR 93 Updated ( 45 records)
... I-WRITE SCAN, [2467] CORR 87 Updated ( 45 records)
... I-WRITE SCAN, [2466] CORR 86 Updated ( 45 records)
... I-WRITE SCAN, [2461] CORR 79 Updated ( 45 records)
... I-WRITE SCAN, [2460] CORR 78 Updated ( 45 records)
... I-WRITE SCAN, [2459] CORR 77 Updated ( 45 records)
... I-WRITE SCAN, [2455] CORR 71 Updated ( 45 records)
... I-WRITE SCAN, [2454] CORR 70 Updated ( 45 records)
... I-WRITE SCAN, [2453] CORR 69 Updated ( 45 records)
... I-WRITE SCAN, [2445] CORR 55 Updated ( 44 records)
... I-WRITE SCAN, [2444] CORR 54 Updated ( 44 records)
... I-WRITE SCAN, [2443] CORR 53 Updated ( 44 records)
... I-WRITE SCAN, [2442] CORR 52 Updated ( 44 records)
... I-WRITE SCAN, [2441] FLUX 51 Updated ( 44 records)
... I-WRITE SCAN, [2436] CORR 42 Updated ( 44 records)
... I-WRITE SCAN, [2435] CORR 41 Updated ( 44 records)
... I-WRITE SCAN, [2434] CORR 40 Updated ( 44 records)
... I-WRITE SCAN, [2433] CORR 39 Updated ( 44 records)
... I-WRITE SCAN, [2432] FLUX 38 Updated ( 44 records)
... I-WRITE SCAN, [3129] FLUX 881 Updated ( 45 records)
... I-WRITE SCAN, [2465] CORR 85 Updated ( 45 records)

RDI FLUX[1:N CALS,FREC] is a double precision Sub-Array of dimensions 6
  1.26300000000000012  0.24399999999999995  0.35899999999999996
  2.62700000000000022  18.486000000000007  0.20000000000000011

Rebuilding the Flux list for Receiver 1 ...
I-FIND, [2465] New generation receivers data
I-FIND, [2465] 5 observations found
Source 1 1803+784 Flux 1.91 Jy at 78.5 GHz
I-FIND, [2432] New generation receivers data
I-FIND, [2432] 5 observations found
Source 2 MWC349 Flux 0.91 Jy at 78.5 GHz
I-FIND, [2441] New generation receivers data
I-FIND, [2441] 51 observations found
Source 3 J2223+628 Flux 0.36 Jy at 78.5 GHz
I-FIND, [2453] New generation receivers data
I-FIND, [2453] 48 observations found
Source 4 0859+581 Flux 2.61 Jy at 78.5 GHz
I-FIND, [2459] New generation receivers data
I-FIND, [2459] 4 observations found
Source 5 3C84 Flux 18.15 Jy at 78.5 GHz
I-FIND, [3129] New generation receivers data
I-FIND, [3129] 3 observations found
Source 6 LKHA101 Flux 0.20 Jy at 78.5 GHz
RDI FLUX[1:N CALS,FREC] is a double precision Sub-Array of dimensions 6
  1.91400000000000015  0.90500000000000027  0.35699999999999994
  2.61100000000000021  18.150000000000001  0.20000000000000011

--- archiving efficiencies resulting from this calibration ---

JY K is a real Array of dimensions 12
  25.92000  30.04000  29.77000  32.51000  25.78000
  29.36000  25.76000  27.94000  0.000000  26.57000
  0.000000  0.000000

..... file rename is done
chmod: changing permissions of '/SOG/observer/Monitor/effs/efficiencies-b1-tl2.dat': Permission denied
chmod: changing permissions of '/SOG/observer/Monitor/effs/efficiencies-b1-w.dat': Permission denied
chmod: changing permissions of '/SOG/observer/Monitor/effs/efficiencies-b2.dat': Permission denied
chmod: changing permissions of '/SOG/observer/Monitor/effs/efficiencies-b3.dat': Permission denied
chmod: changing permissions of '/SOG/observer/Monitor/effs/efficiencies-b4.dat': Permission denied
W-SYSTEM, Shell could not execute command: chmod ugo+rw /SOG/observer/Monitor/effs/efficiencies-b*.dat*
CLIC>
```

Flux Receiver 1 GUI Output:

```
SOLVE GET RESULT STORE
Frequency 78.5 GHz (LSB)
Efficiencies: 25.92 30.04 29.77 32.51 25.78
Scan list ? 2423 3139
Calibrator 1803+784
Input Flux? 1.914
Fixed flux?  No
Solved Flux: 1.914
Flux in File: 1.914
Source MWC349, Model Flux 1 Jy
Input Flux? 0.905
Fixed flux?  No
Solved Flux: 0.905
Flux in File: 0.905
Calibrator J2223+628
Input Flux? 0.357
Fixed flux?  No
Solved Flux: 0.357
Flux in File: 0.357
Calibrator 0059+581
Input Flux? 2.611
Fixed flux?  No
Solved Flux: 2.611
Flux in File: 2.611
Calibrator 3C84
Input Flux? 18.15
Fixed flux?  No
Solved Flux: 18.15
Flux in File: 18.15
Source LKHA101, Model Flux 0.2 Jy
Input Flux? 0.2
Fixed flux?  Yes
Solved Flux: 0.2
Flux in File: 0.2
Help Go Close
```

Practical Tips: CLIC software tools

The screenshot displays a Linux desktop environment with a terminal window and a configuration window for 'Flux Receiver 1'.

Terminal Window Output:

```
krips@aodsrv-pdb:/SOG/project/s18ao001
I-WRITE SCAN,[2465] CORR 85 Updated ( 45 records)
RDI FLUX[1:N CALS,FREC] is a double precision Sub-Array of dimensions 6
1.26300000000000012 0.24399999999999995 0.35899999999999986
2.62700000000000022 18.486000000000007 0.20000000000000011

Rebuilding the Flux list for Receiver 1 ...
I-FIND,[2465] New generation receivers data
I-FIND,[2465] 5 observations found
Source 1 1803+784 Flux 1.91 Jy at 78.5 GHz
I-FIND,[2432] New generation receivers data
I-FIND,[2432] 5 observations found
Source 2 MWC349 Flux 0.91 Jy at 78.5 GHz
I-FIND,[2441] New generation receivers data
I-FIND,[2441] 51 observations found
Source 3 J2223+628 Flux 0.36 Jy at 78.5 GHz
I-FIND,[2453] New generation receivers data
I-FIND,[2453] 48 observations found
Source 4 0059+581 Flux 2.61 Jy at 78.5 GHz
I-FIND,[2459] New generation receivers data
I-FIND,[2459] 4 observations found
Source 5 3C84 Flux 18.15 Jy at 78.5 GHz
I-FIND,[3129] New generation receivers data
I-FIND,[3129] 3 observations found
Source 6 LKHA101 Flux 0.20 Jy at 78.5 GHz
RDI FLUX[1:N CALS,FREC] is a double precision Sub-Array of dimensions 6
1.91400000000000015 0.90500000000000027 0.35699999999999984
2.61100000000000021 18.150000000000021 0.20000000000000011
-----
--- archiving efficiencies resulting from this calibration ---
JY K is a real Array of dimensions 12
25.92000 30.04000 29.77000 32.51000 25.78000
29.36000 25.76000 27.94000 0.00000 26.57000
0.00000 0.00000
..... file rename is done
chmod: changing permissions of '/SOG/observer/Monitor/effs/efficiencies-b1-tl2.dat': Permission denied
chmod: changing permissions of '/SOG/observer/Monitor/effs/efficiencies-b1-w.dat': Permission denied
chmod: changing permissions of '/SOG/observer/Monitor/effs/efficiencies-b2.dat': Permission denied
chmod: changing permissions of '/SOG/observer/Monitor/effs/efficiencies-b3.dat': Permission denied
chmod: changing permissions of '/SOG/observer/Monitor/effs/efficiencies-b4.dat': Permission denied
W-SYSTEM, Shell could not execute command: chmod ugo+rw /SOG/observer/Monitor/effs/efficiencies-b*.dat*
CLIC>
Phases are Degrees Continuous 10
Plot type is BARS
Logical antennas
I-SET, clearing the tree and resetting BOX_LOCATION
I-FIND,[3137] New generation receivers data
I-FIND,[3137] 116 observations found
W-FIND,[3137] Nothing found
W-FIND,[3137] Nothing found
X axis : Time , = to =
Y axis : Amplitude , 0.00 to *
Amplitudes are absolute
Amplitude Calibration is antenna-based
Amplitudes are divided by assumed calibrator flux
Amplitudes are expressed in kelvins
I-CLIC SET,[3137] Selecting polarization mode: BOTH
I-CLIC SET,[3137] Polarization mode: BOTH
Baseband mode selected
All baseband selected
Baseband group 1 : 1 2 3 4 5 6 7 8
```

Flux Receiver 1 Configuration Window:

SOLVE GET RESULT STORE

Frequency 78.5 GHz (LSI) PLOT

Efficiencies: 25.92 30.04 29.77 32.51 25.78

Scan list ? 2423 3139

Calibrator 1803+784

Input Flux? 1.914

Fixed flux? No

Solved Flux: 1.914

Flux in File: 1.914

Source MWC349, Model Flux 1 Jy

Input Flux? 0.905

Fixed flux? No

Solved Flux: 0.905

Flux in File: 0.905

Calibrator J2223+628

Input Flux? 0.357

Fixed flux? No

Solved Flux: 0.357

Flux in File: 0.357

Calibrator 0059+581

Input Flux? 2.611

Fixed flux? No

Solved Flux: 2.611

Flux in File: 2.611

Calibrator 3C84

Input Flux? 18.15

Fixed flux? No

Solved Flux: 18.15

Flux in File: 18.15

Source LKHA101, Model Flux 0.2 Jy

Input Flux? 0.2

Fixed flux? Yes

Solved Flux: 0.2

Flux in File: 0.2

Help Go Close

Practical Tips: CLIC software tools

The screenshot shows a Linux desktop environment with a terminal window titled 'krips@aodsrv-pdb:/SOG/project/s18ao001'. The terminal displays the following output:

```
I-WRITE SCAN,[2465] CORR 85 Updated ( 45 records)
RDI FLUX[1:N CALS,FREC] is a double precision Sub-Array of dimensions 6
1.26300000000000012 0.24399999999999995 0.35899999999999986
2.62700000000000022 18.486000000000007 0.20000000000000011

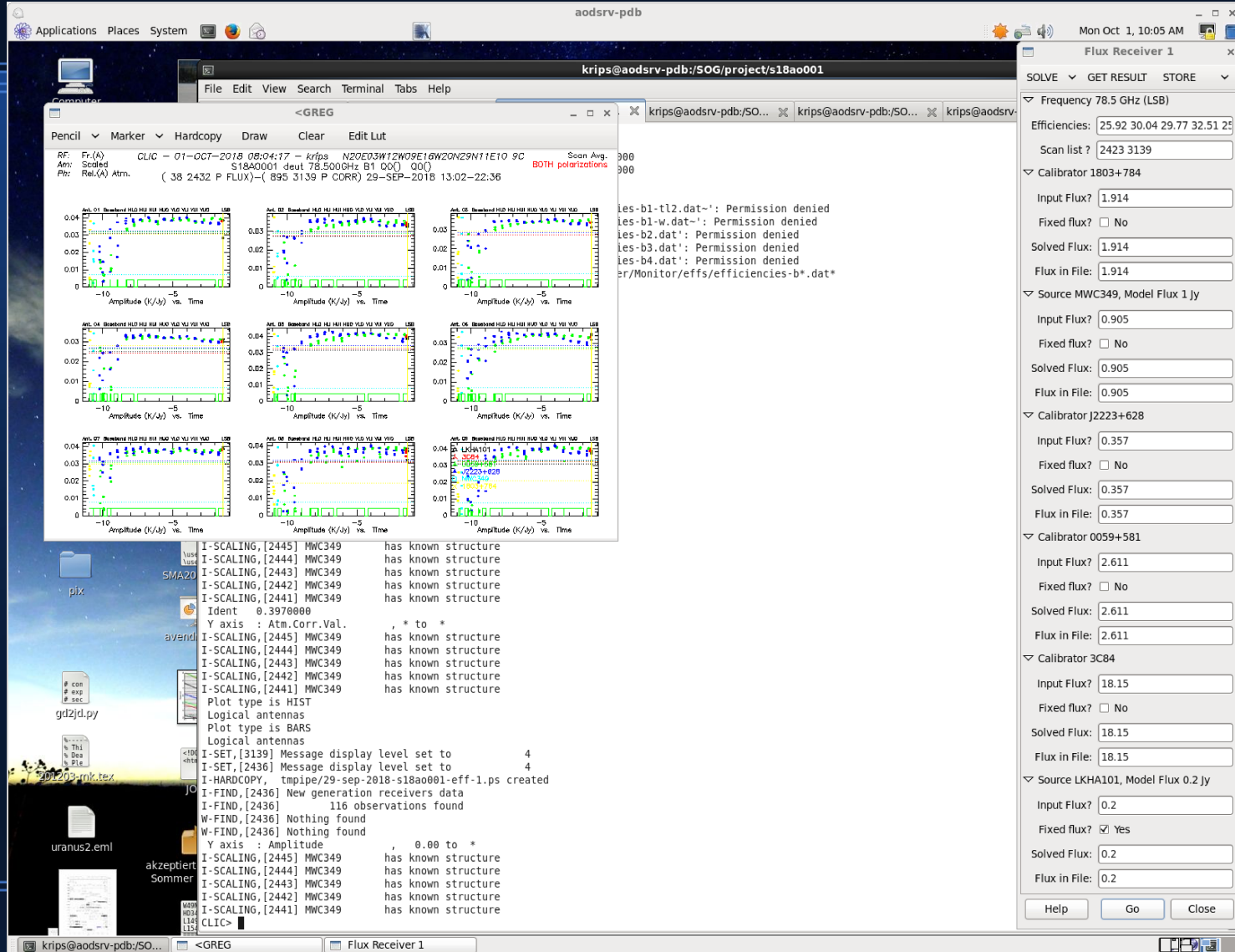
Rebuilding the Flux list for Receiver 1 ...
I-FIND,[2465] New generation receivers data
I-FIND,[2465] 5 observations found
Source 1 1803+784 Flux 1.91 Jy at 78.5 GHz
I-FIND,[2432] New generation receivers data
I-FIND,[2432] 5 observations found
Source 2 MWC349 Flux 0.91 Jy at 78.5 GHz
I-FIND,[2441] New generation receivers data
I-FIND,[2441] 51 observations found
Source 3 J2223+628 Flux 0.36 Jy at 78.5 GHz
I-FIND,[2453] New generation receivers data
I-FIND,[2453] 48 observations found
Source 4 0059+581 Flux 2.61 Jy at 78.5 GHz
I-FIND,[2459] New generation receivers data
I-FIND,[2459] 4 observations found
Source 5 3C84 Flux 18.15 Jy at 78.5 GHz
I-FIND,[3129] New generation receivers data
I-FIND,[3129] 3 observations found
Source 6 LKHA101 Flux 0.20 Jy at 78.5 GHz
RDI FLUX[1:N CALS,FREC] is a double precision Sub-Array of dimensions 6
1.91400000000000015 0.90500000000000027 0.35699999999999984
2.61100000000000021 18.150000000000021 0.20000000000000011
-----
--- archiving efficiencies resulting from this calibration ---
JY K is a real Array of dimensions 12
25.92000 30.04000 29.77000 32.51000 25.78000
29.36000 25.76000 27.94000 0.00000 26.57000
0.00000 0.00000
..... file rename is done
chmod: changing permissions of '/SOG/observer/Monitor/effs/efficiencies-b1-tl2.dat': Permission denied
chmod: changing permissions of '/SOG/observer/Monitor/effs/efficiencies-b1-w.dat': Permission denied
chmod: changing permissions of '/SOG/observer/Monitor/effs/efficiencies-b2.dat': Permission denied
chmod: changing permissions of '/SOG/observer/Monitor/effs/efficiencies-b3.dat': Permission denied
chmod: changing permissions of '/SOG/observer/Monitor/effs/efficiencies-b4.dat': Permission denied
W-SYSTEM, Shell could not execute command: chmod ugo+rw /SOG/observer/Monitor/effs/efficiencies-b*.dat*
CLIC>
Phases are Degrees Continuous 10
Plot type is BARS
Logical antennas
I-SET, clearing the tree and resetting BOX_LOCATION
I-FIND,[3137] New generation receivers data
I-FIND,[3137] 116 observations found
W-FIND,[3137] Nothing found
W-FIND,[3137] Nothing found
X axis : Time , = to =
Y axis : Amplitude , 0.00 to *
Amplitudes are absolute
Amplitude Calibration is antenna-based
Amplitudes are divided by assumed calibrator flux
Amplitudes are expressed in kelvins
I-CLIC SET,[3137] Selecting polarization mode: BOTH
I-CLIC SET,[3137] Polarization mode: BOTH
Baseband mode selected
All baseband selected
Baseband group 1 : 1 2 3 4 5 6 7 8
```

Overlaid on the terminal is a 'Flux Receiver 1' configuration window. It features a 'SOLVE' dropdown menu and a 'GET RESULT' button. The 'PLOT' button is highlighted in red. The window displays the following settings:

- Frequency: 78.5 GHz (LSI) **PLOT** >> NEXT
- Efficiencies: 25.92 30.04 29.77 32.51 25.78
- Scan list: 2423 3139
- Calibrator: 1803+784
 - Input Flux: 1.914
 - Fixed flux? No
 - Solved Flux: 1.914
 - Flux in File: 1.914
- Source: MWC349, Model Flux 1 Jy
 - Input Flux: 0.905
 - Fixed flux? No
 - Solved Flux: 0.905
 - Flux in File: 0.905
- Calibrator: J2223+628
 - Input Flux: 0.357
 - Fixed flux? No
 - Solved Flux: 0.357
 - Flux in File: 0.357
- Calibrator: 0059+581
 - Input Flux: 2.611
 - Fixed flux? No
 - Solved Flux: 2.611
 - Flux in File: 2.611
- Calibrator: 3C84
 - Input Flux: 18.15
 - Fixed flux? No
 - Solved Flux: 18.15
 - Flux in File: 18.15
- Source: LKHA101, Model Flux 0.2 Jy
 - Input Flux: 0.2
 - Fixed flux? Yes
 - Solved Flux: 0.2
 - Flux in File: 0.2

At the bottom of the window are 'Help', 'Go', and 'Close' buttons.

Practical Tips: CLIC software tools



The screenshot displays a Linux desktop environment with the following components:

- Terminal Window (krips@aodsrv-pdb/SOG/project/s18ao001):**

```

<GREG
Pencil Marker Hardcopy Draw Clear Edit Lut
RF: Fr.(A) CLIC - 01-OCT-2018 08:04:17 - krips N20E03W12W09E16W20N29N11E10 9C Scan Avg. 000
Am: Scaled S18AO001.dat 78.500GHz B1 CXC 000 BOTH polarizations 000
Pr: Rel.(A) Atm. ( 38 2432 P FLUX)-( 895 3139 P CORR) 29-SEP-2018 13:02-22:36

```

les-b1-tl2.dat': Permission denied
les-b1-w.dat': Permission denied
les-b2.dat': Permission denied
les-b3.dat': Permission denied
les-b4.dat': Permission denied
er/Monitor/effs/efficiencies-b*.dat**

```

I-SCALING, [2445] MWC349 has known structure
I-SCALING, [2444] MWC349 has known structure
I-SCALING, [2443] MWC349 has known structure
I-SCALING, [2442] MWC349 has known structure
I-SCALING, [2441] MWC349 has known structure
Ident 0.3970000
Y axis : Atm.Corr.Val. , * to *
I-SCALING, [2445] MWC349 has known structure
I-SCALING, [2444] MWC349 has known structure
I-SCALING, [2443] MWC349 has known structure
I-SCALING, [2442] MWC349 has known structure
I-SCALING, [2441] MWC349 has known structure
Plot type is HIST
Logical antennas
Plot type is BARS
Logical antennas
I-SET, [3139] Message display level set to 4
I-SET, [2436] Message display level set to 4
I-HARDCOPY, tmpipe/29-sep-2018-s18ao001-eff-1.ps created
I-FIND, [2436] New generation receivers data
I-FIND, [2436] 116 observations found
W-FIND, [2436] Nothing found
W-FIND, [2436] Nothing found
Y axis : Amplitude , 0.00 to *
I-SCALING, [2445] MWC349 has known structure
I-SCALING, [2444] MWC349 has known structure
I-SCALING, [2443] MWC349 has known structure
I-SCALING, [2442] MWC349 has known structure
I-SCALING, [2441] MWC349 has known structure
CLIC>

```
- Flux Receiver 1 Window:**

SOLVE GET RESULT STORE

Frequency 78.5 GHz (LSB)

Efficiencies: 25.92 30.04 29.77 32.51 25

Scan list ? 2423 3139

Calibrator 1803+784

Input Flux? 1.914

Fixed flux? No

Solved Flux: 1.914

Flux in File: 1.914

Source MWC349, Model Flux 1 Jy

Input Flux? 0.905

Fixed flux? No

Solved Flux: 0.905

Flux in File: 0.905

Calibrator J2223+628

Input Flux? 0.357

Fixed flux? No

Solved Flux: 0.357

Flux in File: 0.357

Calibrator 0059+581

Input Flux? 2.611

Fixed flux? No

Solved Flux: 2.611

Flux in File: 2.611

Calibrator 3C84

Input Flux? 18.15

Fixed flux? No

Solved Flux: 18.15

Flux in File: 18.15

Source LKHA101, Model Flux 0.2 Jy

Input Flux? 0.2

Fixed flux? Yes

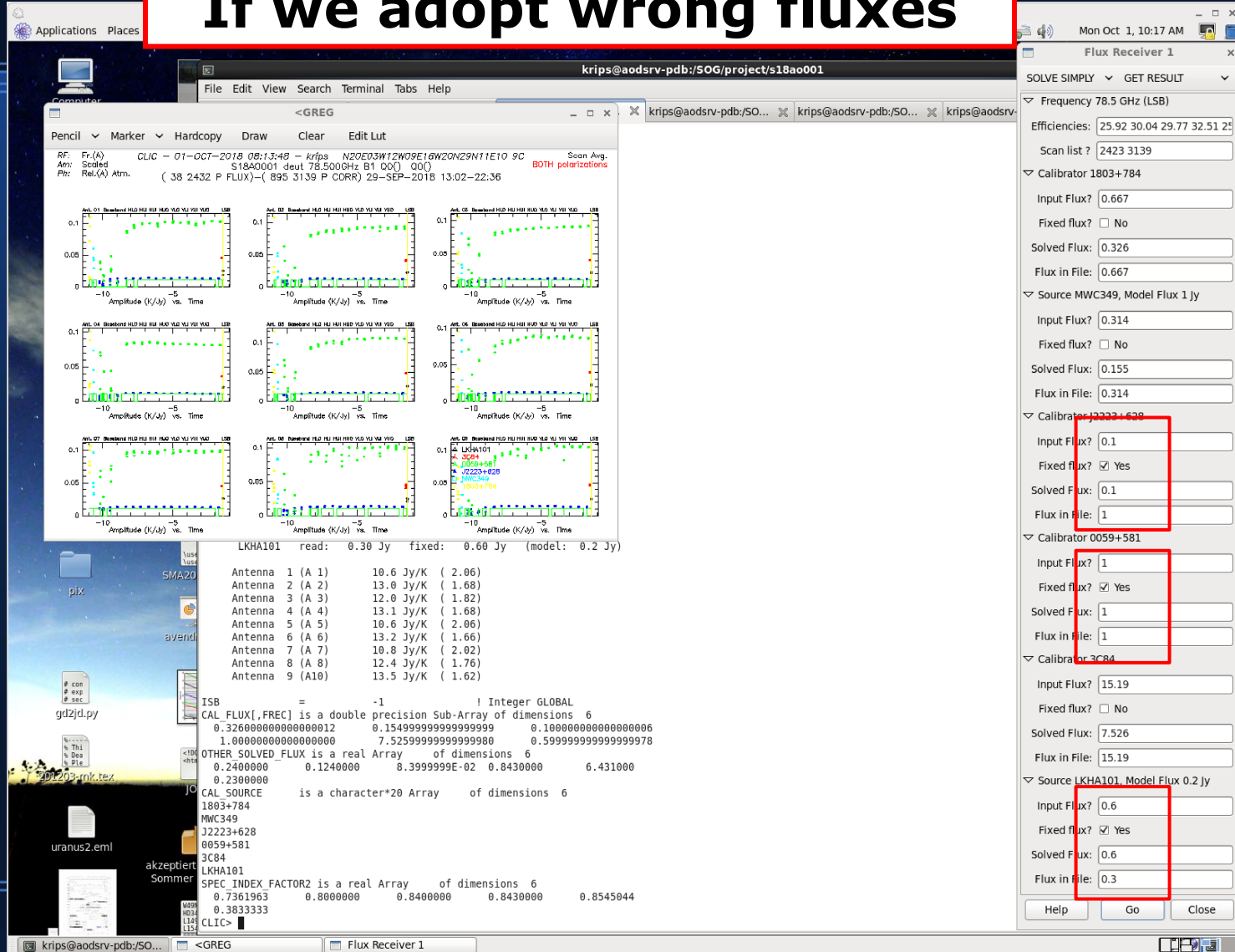
Solved Flux: 0.2

Flux in File: 0.2

Help Go Close

Practical Tips: CLIC software tools

If we adopt wrong fluxes



The screenshot displays a Linux desktop environment. In the foreground, a terminal window titled 'krips@aodsvr-pdb:/SOG/project/s18ao001' shows the output of the CLIC software. The output includes a table of antenna gains and a list of calibration sources with their associated fluxes. A red box highlights the flux values for three calibration sources: J2223+628 (0.1 Jy), 0059+581 (1 Jy), and 3C84 (15.19 Jy).

Antenna	Gain (Jy/K)
Antenna 1 (A 1)	10.6
Antenna 2 (A 2)	13.0
Antenna 3 (A 3)	12.0
Antenna 4 (A 4)	13.1
Antenna 5 (A 5)	10.6
Antenna 6 (A 6)	13.2
Antenna 7 (A 7)	10.8
Antenna 8 (A 8)	12.4
Antenna 9 (A10)	13.5

Calibration sources and fluxes:

- Calibrator J2223+628: Input Flux? 0.1, Fixed flux? Yes, Solved Flux: 0.1, Flux in file: 1
- Calibrator 0059+581: Input Flux? 1, Fixed flux? Yes, Solved Flux: 1, Flux in file: 1
- Calibrator 3C84: Input Flux? 15.19, Fixed flux? No, Solved Flux: 7.526, Flux in file: 15.19

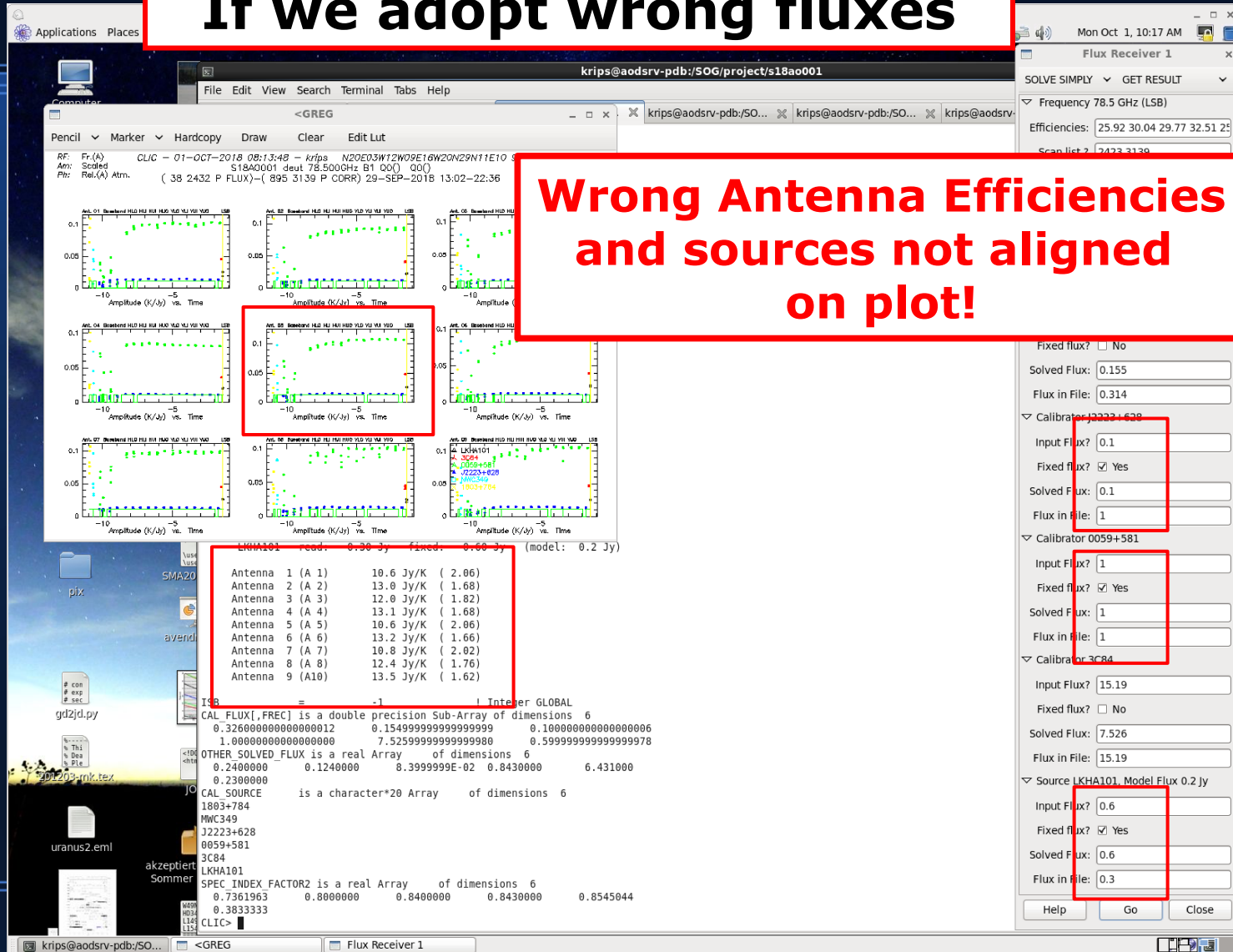
Source LKHA101, Model Flux 0.2 Jy:

- Input Flux? 0.6, Fixed flux? Yes, Solved Flux: 0.6, Flux in file: 0.3

The background shows a window titled '<GREG' containing several plots of Amplitude (K/Jy) vs. Time. The desktop also features icons for 'pix', 'SMA20', 'avend', 'gd2jd.py', 'uranus2.eml', and 'akzeptiert Sommer'.

If we adopt wrong fluxes

**Wrong Antenna Efficiencies
and sources not aligned
on plot!**



The screenshot displays a desktop environment with a terminal window running the GREG software. The terminal shows a plot of Amplitude (K/Jy) vs. Time for various antennas. The plot shows a significant misalignment between the data points and the expected flux values, indicating a problem with the antenna efficiencies or source alignment. The Flux Receiver 1 control panel is visible on the right, showing input flux values and checkboxes for fixed flux and solved flux. The terminal output includes a table of antenna efficiencies and a list of sources.

Antenna	Efficiency (Jy/K)	Model Flux (Jy)
Antenna 1 (A 1)	10.6	2.06
Antenna 2 (A 2)	13.0	1.68
Antenna 3 (A 3)	12.0	1.82
Antenna 4 (A 4)	13.1	1.68
Antenna 5 (A 5)	10.6	2.06
Antenna 6 (A 6)	13.2	1.66
Antenna 7 (A 7)	10.8	2.02
Antenna 8 (A 8)	12.4	1.76
Antenna 9 (A10)	13.5	1.62

Source list:

- LKHA101
- J2223+628
- MWC349
- 0059+581
- 3C84

Questions?