

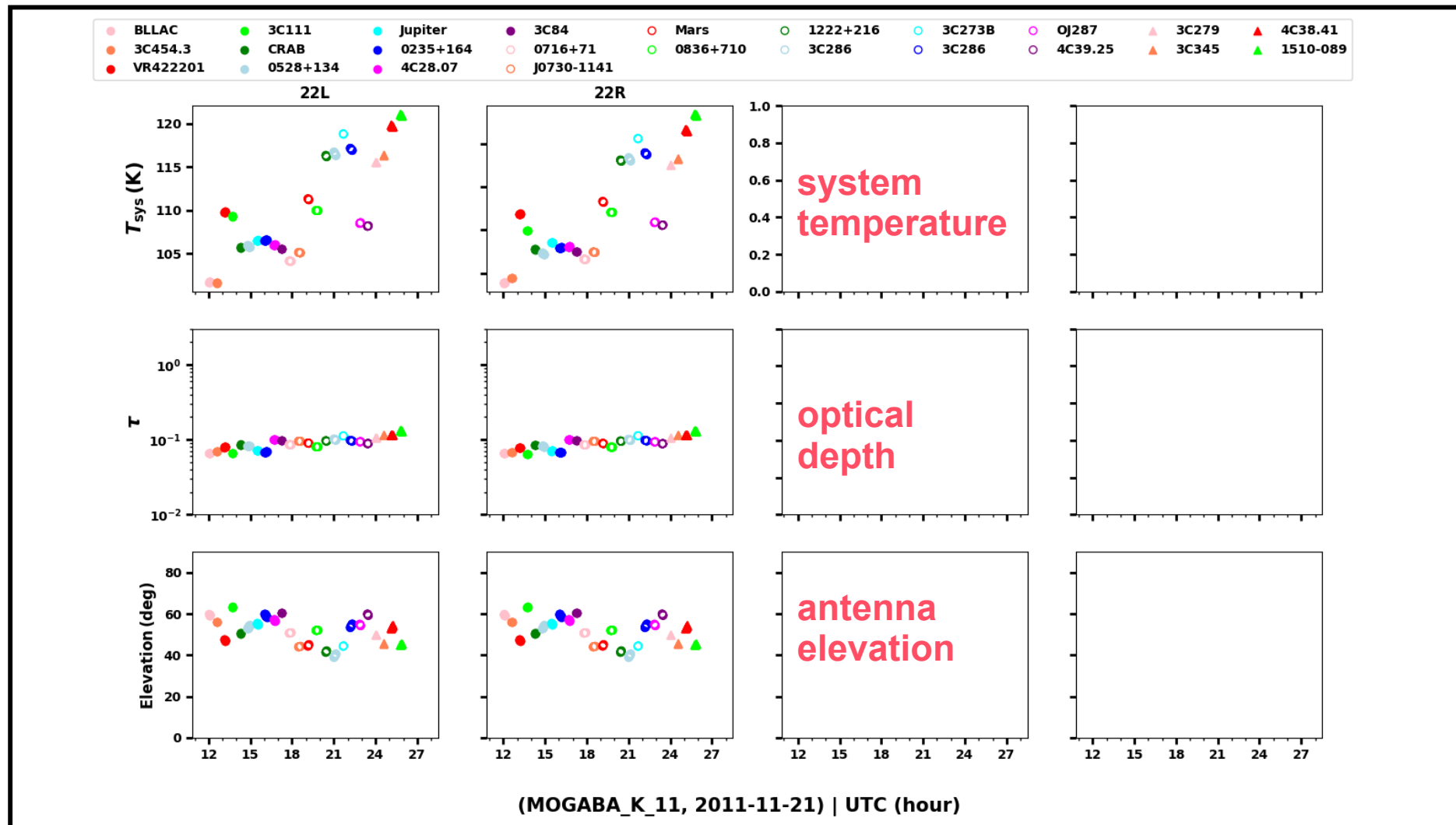
## < mogaba\_pipe\_run.py > // toggle options and basic setting

```
SaveCSFit  = True      # if 'True', save cross-scan Gaussian fitting plots
SaveCSLog   = True      # if 'True', save cross-scan log info
SavePSLog   = True      # if 'True', save position-switching log info
SaveACPlot  = False     # !!! Please note that LR-swapping is forced at 129 GHz (@ line 353) !!!
Auto_Flag   = False     # if 'True', auto-flagging mode is applied to bad scan(s) in position-switching data
Run_CSFits  = True      # if 'True', cross-scan fit will be performed using the MCMC ; elsewhere, skip cs-fit
LR_Swap     = False     # set 'True' if you want to swap into RL pol order
                # * NOTE: LR_Swap is forced to be 'True' at D-band

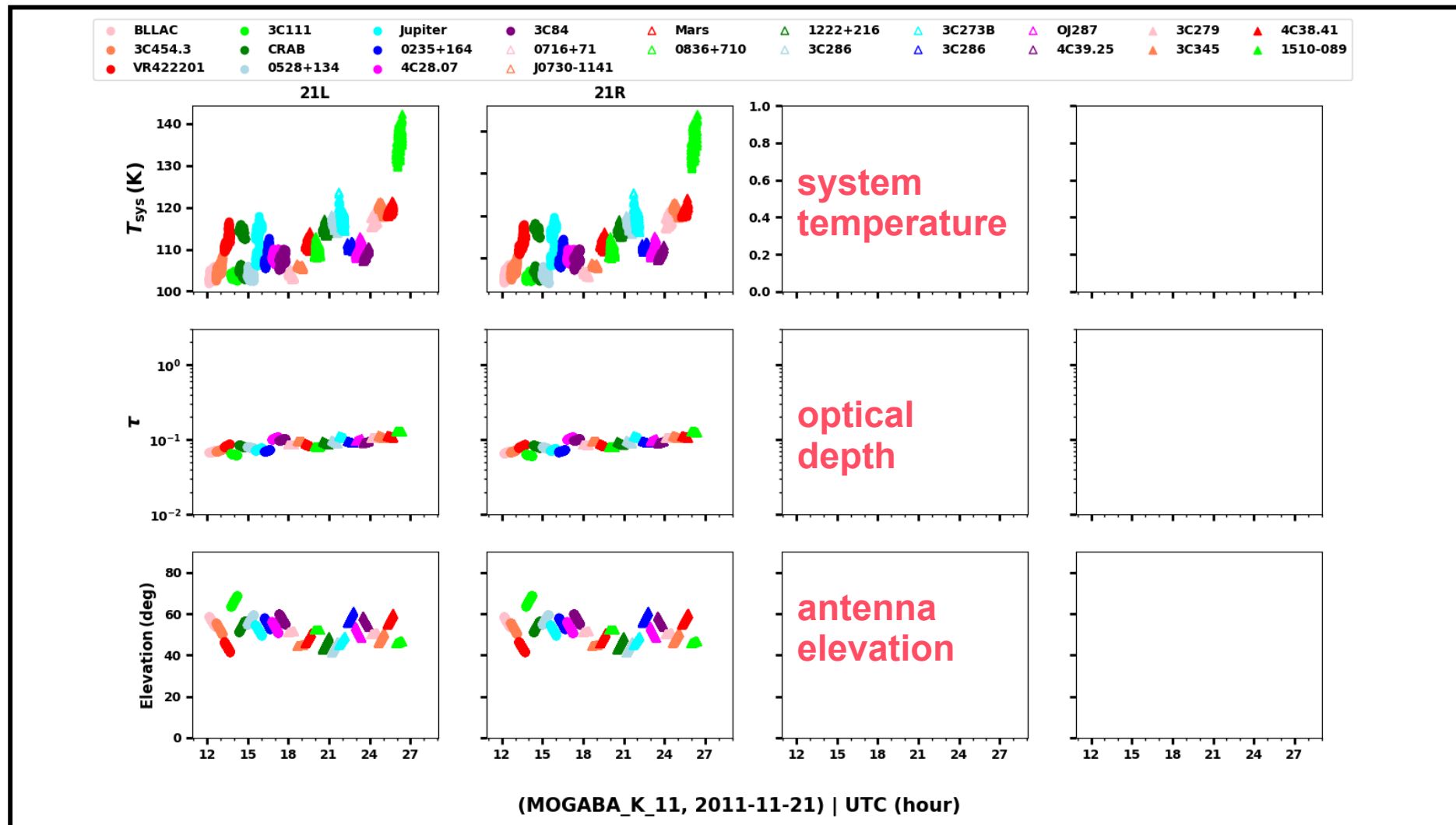
antenna = f"tn".upper()
station = f"K{antenna}"
nw, nr   = 5*2, 2000    # should be in format of 'KYS' / 'KUS' / 'KPC' / 'KTN'
Polnum   = 0            # the number of walkers & total step of MCMC in cs-profile fitting
                # 0:all(1&2) / 1:1-only / 2:2-only
                # e.g., 1 and 2 mean K- and Q-band for KQ data
```

change toggle options and antenna name by your purpose

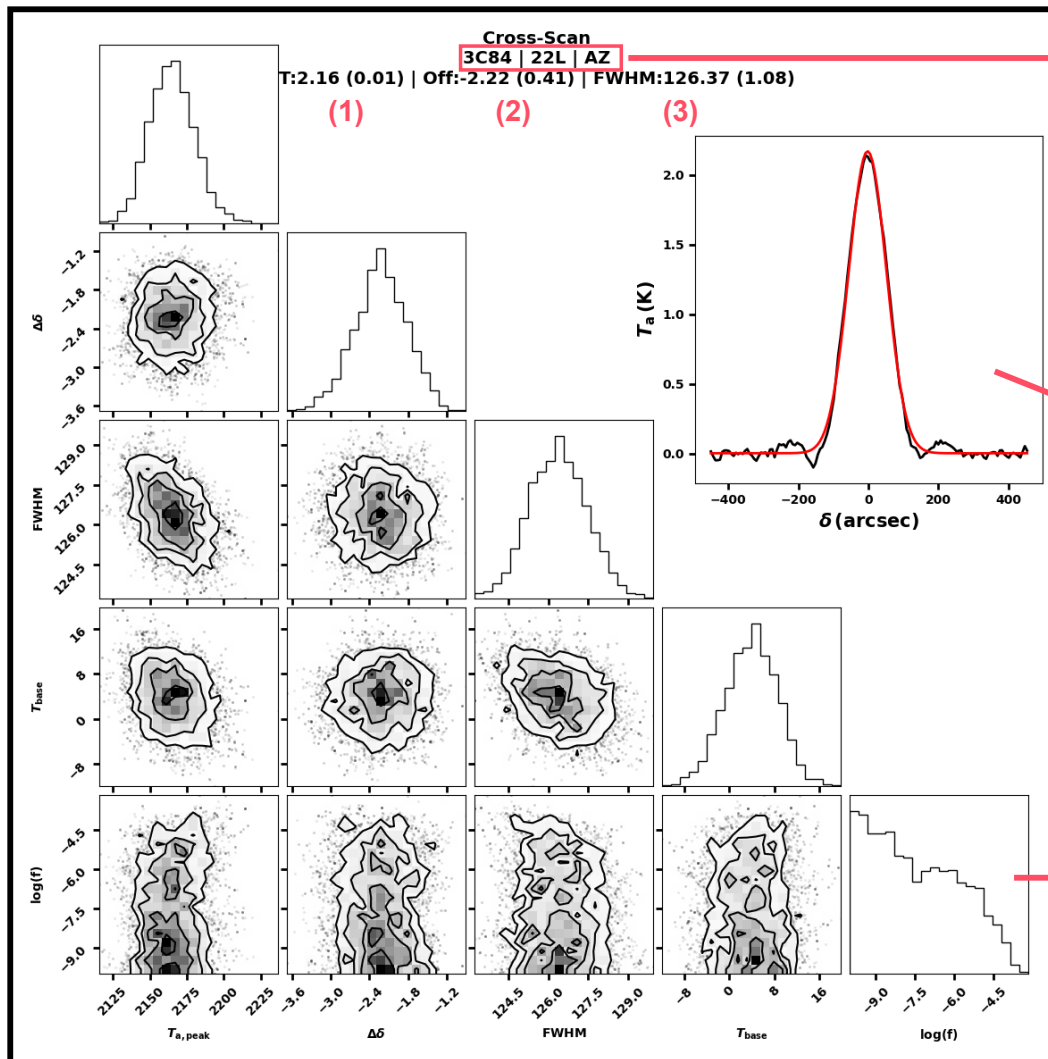
< PS log plot ('SaveCSLog') > // './Figures/cs/CS\_Logs/'



< PS log plot ('SavePSLog') > // './Figures/ps/PS\_Logs/'



# < CS plots ('SaveCSFit') > // cross-scan corner plot ('./Figures/cs/<date>/' )



Source | frequency & polarization | CS dirrection

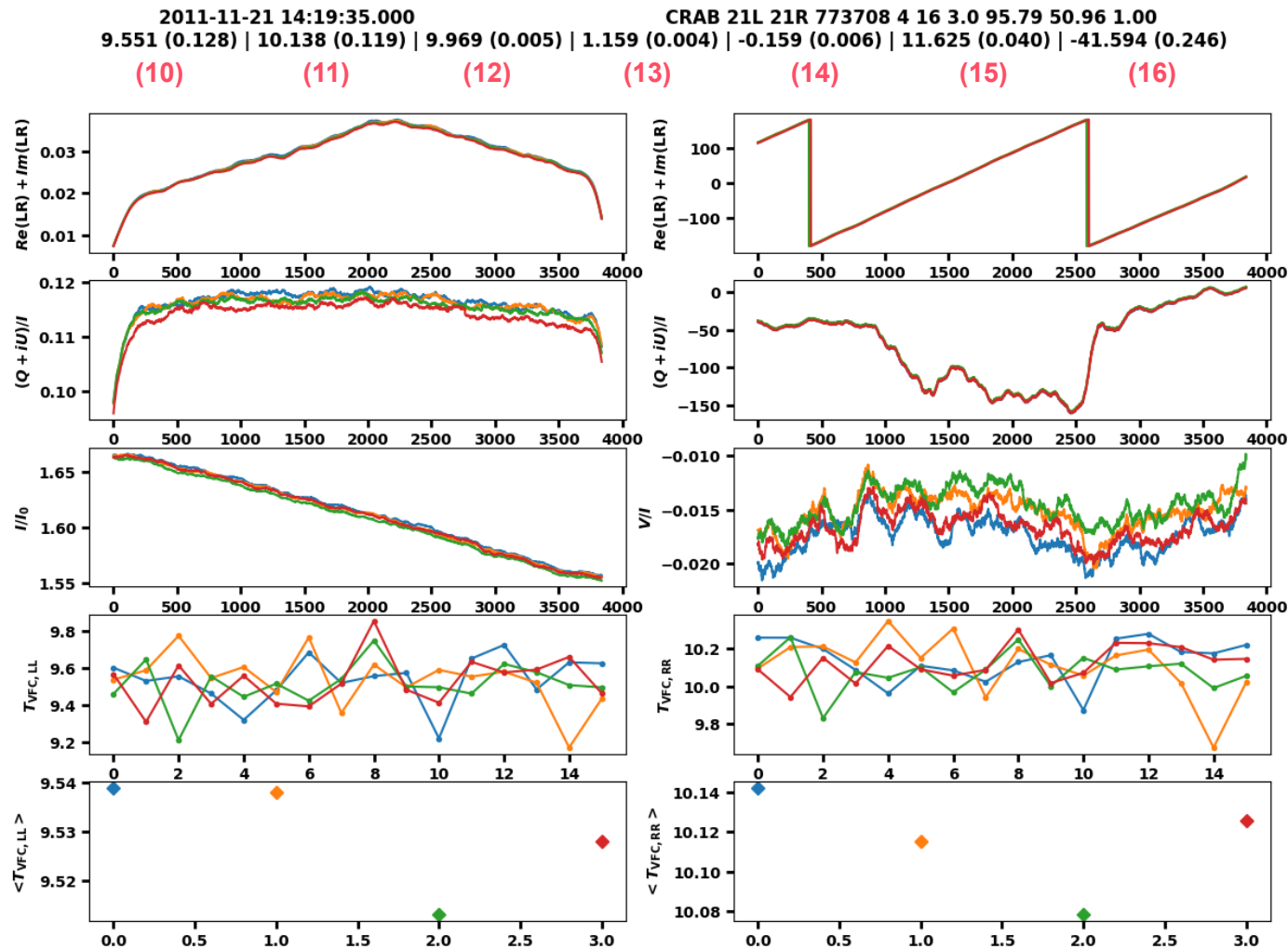
(1): peak antenna temperature (error)  
(2): antenna offset (error)  
(3): full-width half maximum (error)

black line: observed CS profile  
red line: MCMC fitting profile

$\log(f)$  distribution  
we don't need to care seriously  
on this 'ugly' distribution.

# < PS plots > // ('./Figures/ps/<frequency>/<date>/' )

(1) (2) (3) (4)(5)(6) (8) (9)



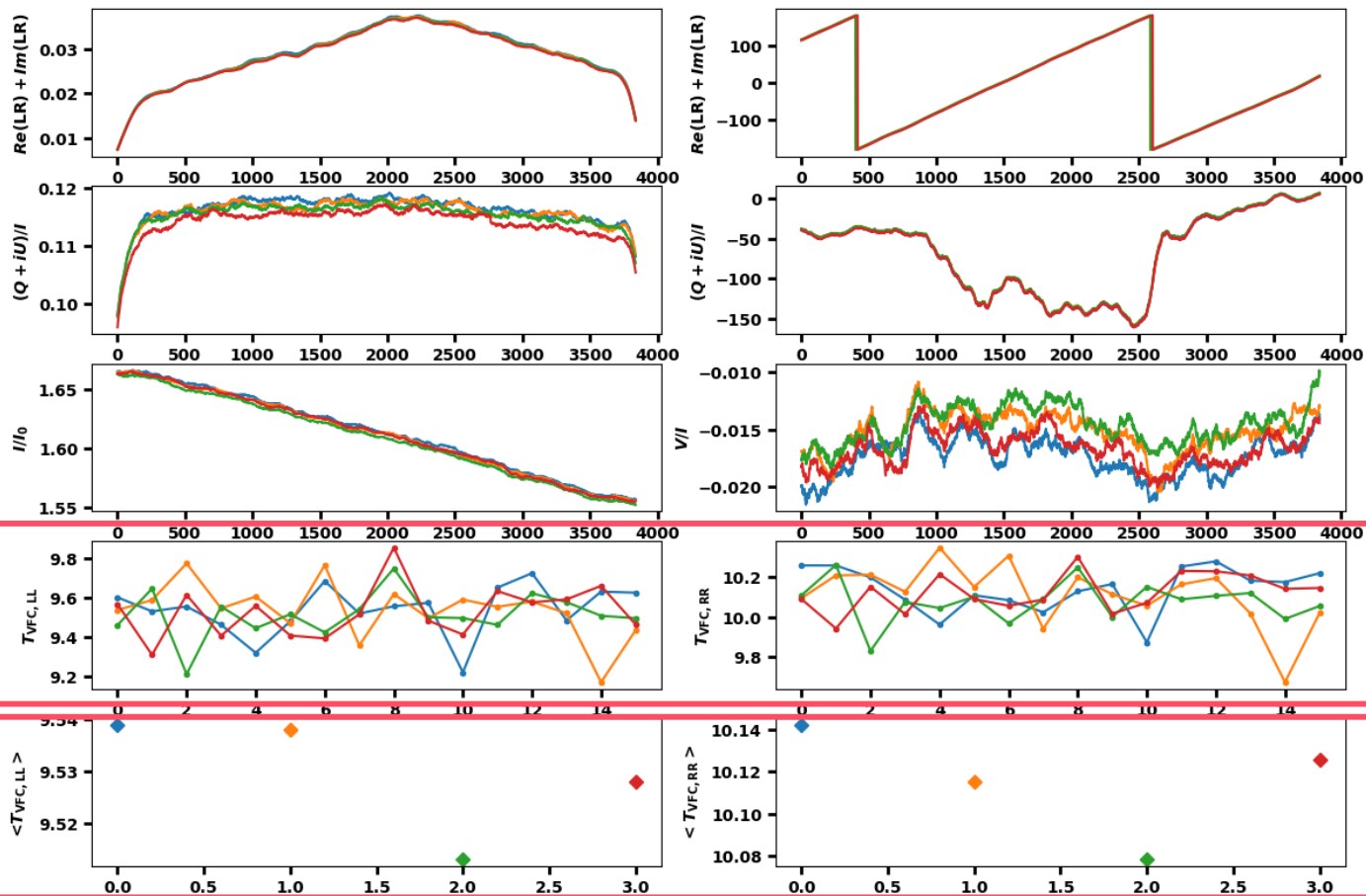
- (1): source name
- (2): frequency and polarization
- (3): scan number
- (4): number of sets (see page #11 & #12)
- (5): number of repeats (see page #11 & #12)
- (6): integration time [sec]
- (7): antenna azimuth
- (8): antenna elevation
- (9): gain based on KVN status report  
& and antenna elevation
- (10):  $T_{ant}$  (std) // LCP
- (11):  $T_{ant}$  (std) // RCP
- (12):  $T_{ant}$  (std) // Stokes I
- (13):  $T_{ant}$  (std) // linear polarization
- (14): fractional polarization (Stokes V)
- (15): fractional linear polarization
- (16): crab-uncorrected polarization angle (deg)

# < PS plots > // ('./Figures/ps/<frequency>/<date>/' )

(1) (2) (3) (4)(5)(6) (8) (9)

2011-11-21 14:19:35.000 CRAB 21L 21R 773708 4 16 3.0 95.79 50.96 1.00  
9.551 (0.128) | 10.138 (0.119) | 9.969 (0.005) | 1.159 (0.004) | -0.159 (0.006) | 11.625 (0.040) | -41.594 (0.246)

(10) (11) (12) (13) (14) (15) (16)



→ sub channels

→ main channels

**< mogaba\_pipe\_run.py > // paths**

```
path_p      = "absolute/path/to/your/sdd/files/"      # sdd directory (python)
path_c      = "relative/path/to/your/sdd/files/"      # sdd directory (GILDAS/CLASS)
path_dir    = "path/to/your/working/directory/"      # working directory
path_cslog  = "path/to/your/working/directory/data_cs/"
path_pslog  = path_p
```

**change these variables**

**path\_p** : path to where '.sdd' files are located (absolute path, used in python)

**path\_c** : path to where '.sdd' files are located (relative path, used in GILDAS/CLASS)

**path\_dir** : path to base directory where 'mogaba\_pipe\_run.py' is located

**path\_cslog** : path to directory where cross-scan logs ('.xlsx') are to be saved

**path\_pslog** : path to directory where position-switching logs ('.xlsx') are to be saved

< CSlog > // ('./data\_cs/')

(1)

(2)

(3)

(4)

(5)

(6)

(7)

(8)

(9)

(10)

(11)

|    | Source     | Date                | Year      | MJD       | ScanNum | Nseq | Nscan | Tsys_1    | dTsys_1   | Tsys_2 | dTsys_2 | Tau_1     | dTau_1    | Tau_2 | dTau_2 | Az        | El        | Scan1  | Scan2  |
|----|------------|---------------------|-----------|-----------|---------|------|-------|-----------|-----------|--------|---------|-----------|-----------|-------|--------|-----------|-----------|--------|--------|
| 0  | BLLAC      | 2011-11-21 12:02:14 | 2011.8893 | 55886.502 | 769368  | 1    | 16    | 97.790365 | 3.9323461 | 0      | 0       | 0.0660272 | 0.0005661 | 0     | 0      | 298.33624 | 59.862619 | 769368 | 769383 |
| 1  | 3C454.3    | 2011-11-21 12:36:01 | 2011.8893 | 55886.525 | 770456  | 1    | 8     | 98.018844 | 3.5934275 | 0      | 0       | 0.0685438 | 0.000569  | 0     | 0      | 247.21498 | 56.247721 | 770456 | 770463 |
| 2  | VR422201   | 2011-11-21 13:08:35 | 2011.8894 | 55886.548 | 771530  | 1    | 16    | 105.81601 | 3.9605163 | 0      | 0       | 0.0786841 | 0.000862  | 0     | 0      | 298.36657 | 47.612183 | 771530 | 771545 |
| 3  | 3C111      | 2011-11-21 13:42:28 | 2011.8895 | 55886.571 | 772618  | 1    | 8     | 104.62921 | 4.6609259 | 0      | 0       | 0.0647133 | 0.0006627 | 0     | 0      | 430.3803  | 63.015776 | 772618 | 772625 |
| 4  | CRAB       | 2011-11-21 14:16:54 | 2011.8895 | 55886.595 | 773692  | 1    | 8     | 101.73758 | 3.9660894 | 0      | 0       | 0.0855742 | 0.0004253 | 0     | 0      | 95.356653 | 50.402281 | 773692 | 773699 |
| 5  | 0528+134   | 2011-11-21 14:47:35 | 2011.8896 | 55886.616 | 774764  | 1    | 32    | 101.55793 | 4.29184   | 0      | 0       | 0.0820441 | 0.0006633 | 0     | 0      | 114.08863 | 52.846915 | 774764 | 774795 |
| 6  | Jupiter    | 2011-11-21 15:28:10 | 2011.8897 | 55886.645 | 775886  | 1    | 16    | 102.54557 | 3.9770183 | 0      | 0       | 0.0713918 | 0.0004699 | 0     | 0      | 235.65551 | 55.596886 | 775886 | 775901 |
| 7  | 0235+164   | 2011-11-21 16:01:22 | 2011.8897 | 55886.668 | 776974  | 1    | 32    | 102.24673 | 4.3069618 | 0      | 0       | 0.0682368 | 0.0005424 | 0     | 0      | 242.59452 | 60.08919  | 776974 | 777005 |
| 8  | 4C28.07    | 2011-11-21 16:41:27 | 2011.8898 | 55886.695 | 778096  | 1    | 16    | 102.02832 | 3.9593505 | 0      | 0       | 0.1004678 | 0.0003754 | 0     | 0      | 272.36669 | 57.472456 | 778096 | 778111 |
| 9  | 3C84       | 2011-11-21 17:14:40 | 2011.8899 | 55886.719 | 779184  | 1    | 8     | 101.53143 | 4.0267596 | 0      | 0       | 0.096817  | 0.0002159 | 0     | 0      | 296.89015 | 60.699939 | 779184 | 779191 |
| 10 | 0716+71    | 2011-11-21 17:47:41 | 2011.8899 | 55886.741 | 780258  | 1    | 32    | 100.35233 | 3.7670268 | 0      | 0       | 0.0853147 | 0.0001954 | 0     | 0      | 368.56512 | 50.623183 | 780258 | 780289 |
| 11 | J0730-1141 | 2011-11-21 18:28:01 | 2011.89   | 55886.769 | 781378  | 1    | 32    | 101.26415 | 3.8420133 | 0      | 0       | 0.0948745 | 0.0002606 | 0     | 0      | 167.84544 | 43.961812 | 781378 | 781409 |
| 12 | Mars       | 2011-11-21 19:08:41 | 2011.8901 | 55886.798 | 782500  | 1    | 16    | 107.2638  | 3.9933853 | 0      | 0       | 0.0891264 | 0.0006355 | 0     | 0      | 108.20438 | 44.294965 | 782500 | 782515 |
| 13 | 0836+710   | 2011-11-21 19:43:09 | 2011.8902 | 55886.822 | 783588  | 1    | 32    | 105.99678 | 3.9569463 | 0      | 0       | 0.0795986 | 0.0004058 | 0     | 0      | 364.2438  | 51.926995 | 783588 | 783619 |
| 14 | 1222+216   | 2011-11-21 20:25:30 | 2011.8902 | 55886.851 | 784710  | 1    | 16    | 112.15069 | 4.0874637 | 0      | 0       | 0.0956033 | 0.0005981 | 0     | 0      | 90.038265 | 41.289112 | 784710 | 784725 |
| 15 | 3C286      | 2011-11-21 21:00:51 | 2011.8903 | 55886.876 | 785798  | 1    | 32    | 112.35353 | 4.1436775 | 0      | 0       | 0.0995367 | 0.0011936 | 0     | 0      | 75.648348 | 38.836773 | 785798 | 785829 |
| 16 | 3C273B     | 2011-11-21 21:40:31 | 2011.8904 | 55886.903 | 786920  | 1    | 8     | 114.7032  | 4.0804816 | 0      | 0       | 0.1122398 | 0.0003478 | 0     | 0      | 125.92974 | 44.23655  | 786920 | 786927 |
| 17 | 3C286      | 2011-11-21 22:11:09 | 2011.8904 | 55886.924 | 787992  | 2    | 32    | 112.93849 | 4.0729003 | 0      | 0       | 0.0968239 | 0.000731  | 0     | 0      | 82.438519 | 53.264797 | 787992 | 788023 |
| 18 | OJ287      | 2011-11-21 22:52:00 | 2011.8905 | 55886.953 | 789114  | 1    | 16    | 104.70521 | 3.8101466 | 0      | 0       | 0.0934518 | 0.0003527 | 0     | 0      | 256.85027 | 55.027542 | 789114 | 789129 |
| 19 | 4C39.25    | 2011-11-21 23:25:11 | 2011.8906 | 55886.976 | 790202  | 1    | 16    | 104.36528 | 3.806466  | 0      | 0       | 0.0883571 | 0.0002776 | 0     | 0      | 291.58269 | 59.972585 | 790202 | 790217 |
| 20 | 3C279      | 2011-11-22 00:00:44 | 2011.8906 | 55887.001 | 791292  | 1    | 8     | 111.54193 | 3.9852967 | 0      | 0       | 0.1069579 | 0.000149  | 0     | 0      | 169.16726 | 50.046528 | 791292 | 791299 |
| 21 | 3C345      | 2011-11-22 00:33:13 | 2011.8907 | 55887.023 | 792364  | 1    | 8     | 112.32057 | 4.0375761 | 0      | 0       | 0.1147689 | 0.0002936 | 0     | 0      | 424.94675 | 45.452993 | 792364 | 792371 |
| 22 | 4C38.41    | 2011-11-22 01:05:10 | 2011.8908 | 55887.045 | 793438  | 1    | 32    | 115.68148 | 4.0682091 | 0      | 0       | 0.1153999 | 0.0008396 | 0     | 0      | 429.19138 | 52.851915 | 793438 | 793469 |
| 23 | 1510-089   | 2011-11-22 01:44:50 | 2011.8908 | 55887.073 | 794558  | 1    | 32    | 117.20221 | 3.800048  | 0      | 0       | 0.1308742 | 0.0005321 | 0     | 0      | 158.72346 | 44.978903 | 794558 | 794589 |

(1): scan number

(2): sequency number (for repeated obs. toward the same source)

(3): the number of scans

(4): system temperature in rx\_pol1 [K]

(5): standard deviation of system temperature in rx\_pol1 [K]

(6): optical depth

(7): optical depth in rx\_pol1

(8): standard deviation of optical depth in rx\_pol1

(9): antenna azimuth

(10): antenna elevation

(11): scan number (begin)

(12): scan number (end)



|    | Source     | Date             | Year      | MJD       | ScanNum | Nscan | Az        | El        | Tsys_1    | Tsys_2 | Tau_1     | Tau_2 | Nrep | Nswitch |
|----|------------|------------------|-----------|-----------|---------|-------|-----------|-----------|-----------|--------|-----------|-------|------|---------|
| 0  | BLLAC      | 2011-11-21 12:02 | 2011.0003 | 55886.505 | 769400  | 1056  | 298.16718 | 58.891421 | 103.66081 |        | 0.0686553 |       | 4    | 16      |
| 1  | 3C454.3    | 2011-11-21 12:30 | 2011.0004 | 55886.527 | 770472  | 1056  | 247.90311 | 55.73043  | 104.61105 |        | 0.0715284 |       | 4    | 16      |
| 2  | VR422201   | 2011-11-21 13:12 | 2011.0004 | 55886.551 | 771562  | 1056  | 298.51899 | 46.645462 | 110.90244 |        | 0.0834153 |       | 4    | 16      |
| 3  | 3C111      | 2011-11-21 13:42 | 2011.0005 | 55886.573 | 772634  | 1056  | 430.37011 | 63.546366 | 103.31746 |        | 0.0634094 |       | 4    | 16      |
| 4  | CRAB       | 2011-11-21 14:19 | 2011.0005 | 55886.597 | 773708  | 1056  | 95.792563 | 50.959922 | 106.04018 |        | 0.0820483 |       | 4    | 16      |
| 5  | 0528+134   | 2011-11-21 14:52 | 2011.0006 | 55886.624 | 774828  | 1056  | 116.78136 | 54.788321 | 103.42561 |        | 0.0787081 |       | 4    | 16      |
| 6  | Jupiter    | 2011-11-21 15:32 | 2011.0007 | 55886.648 | 775918  | 1056  | 237.2634  | 54.683218 | 109.41487 |        | 0.074454  |       | 4    | 16      |
| 7  | 0235+164   | 2011-11-21 16:12 | 2011.0008 | 55886.675 | 777038  | 1056  | 245.61306 | 58.144902 | 106.759   |        | 0.0714112 |       | 4    | 16      |
| 8  | 4C28.07    | 2011-11-21 16:40 | 2011.0008 | 55886.699 | 778128  | 1056  | 273.00938 | 56.373308 | 108.00489 |        | 0.1050077 |       | 4    | 16      |
| 9  | 3C84       | 2011-11-21 17:12 | 2011.0009 | 55886.72  | 779200  | 1056  | 296.80513 | 60.194881 | 106.9837  |        | 0.09996   |       | 4    | 16      |
| 10 | 0716+71    | 2011-11-21 17:57 | 2011.0009 | 55886.749 | 780322  | 1056  | 367.34287 | 50.92086  | 103.29219 |        | 0.0847998 |       | 4    | 16      |
| 11 | J0730-1141 | 2011-11-21 18:38 | 2011.0009 | 55886.777 | 781442  | 1056  | 171.31844 | 44.348418 | 105.66101 |        | 0.0941075 |       | 4    | 16      |
| 12 | Mars       | 2011-11-21 19:12 | 2011.0001 | 55886.801 | 782532  | 1056  | 109.28335 | 45.334332 | 110.58306 |        | 0.0845315 |       | 4    | 16      |
| 13 | 0836+710   | 2011-11-21 19:52 | 2011.0002 | 55886.829 | 783652  | 1056  | 362.8679  | 52.061737 | 108.64062 |        | 0.0798085 |       | 4    | 16      |
| 14 | 1222+216   | 2011-11-21 20:30 | 2011.0003 | 55886.855 | 784742  | 1056  | 90.756022 | 42.372311 | 113.9506  |        | 0.0890631 |       | 4    | 16      |
| 15 | 3C286      | 2011-11-21 21:12 | 2011.0003 | 55886.883 | 785862  | 1056  | 76.624443 | 40.915196 | 115.57637 |        | 0.0921432 |       | 4    | 16      |
| 16 | 3C273B     | 2011-11-21 21:42 | 2011.0004 | 55886.905 | 786936  | 1056  | 126.6213  | 44.686803 | 116.87494 |        | 0.1073312 |       | 4    | 16      |
| 17 | 3C286      | 2011-11-21 22:22 | 2011.0005 | 55886.932 | 788056  | 1056  | 83.478797 | 55.390348 | 110.22399 |        | 0.0921966 |       | 4    | 16      |
| 18 | OJ287      | 2011-11-21 22:52 | 2011.0005 | 55886.956 | 789146  | 1056  | 257.91043 | 53.960181 | 109.52383 |        | 0.0979476 |       | 4    | 16      |
| 19 | 4C39.25    | 2011-11-21 23:30 | 2011.0006 | 55886.979 | 790234  | 1056  | 291.61017 | 58.948938 | 108.31299 |        | 0.09172   |       | 4    | 16      |
| 20 | 3C279      | 2011-11-22 00:02 | 2011.0007 | 55887.002 | 791308  | 1056  | 170.19165 | 50.146754 | 116.24186 |        | 0.1063821 |       | 4    | 16      |
| 21 | 3C345      | 2011-11-22 00:32 | 2011.0007 | 55887.025 | 792380  | 1056  | 425.07152 | 45.965879 | 119.59244 |        | 0.1094538 |       | 4    | 16      |
| 22 | 4C38.41    | 2011-11-22 01:12 | 2011.0008 | 55887.052 | 793502  | 1056  | 429.55822 | 54.866442 | 118.83399 |        | 0.1102738 |       | 4    | 16      |
| 23 | 1510-089   | 2011-11-22 01:52 | 2011.0009 | 55887.08  | 794622  | 1056  | 162.21236 | 45.697896 | 133.91689 |        | 0.1284568 |       | 4    | 16      |

(1) - (6): same with those in CSlog

(7): number of sets of position-switching

(8): number of repeats in each set

## < mogaba\_pipe\_run.py > // files and calibrators

```
pipe_log = f"mogaba_pipelogs_{antenna}_SE.log"
```

pipeline running log file name.  
(change by your preference)

```
files = [  
    # files to run  
    # you may need to download the data from the server! (e.g., 'scp' command)  
    "MOGABA_K_11_KTN.sdd"  
]
```

List of '.sdd' files to run

```
# some data contains different epochs of recording into one '.sdd' file.  
# each number indicates the corresponding epoch by order.  
version=[1, 2, 3]
```

Sequence number of a data.  
Set 'version=[2]',  
if you want to run only second epoch  
of the data that containing multiple epochs

```
flag_file = [  
    "files having some issues (optional)"  
]
```

(optional)  
Add '.sdd' data having some issues  
and that you do not want to run

```
# unpolarized sources (mainly planets)  
Unpols = ["JUPITER", "MARS", "VENUS", "SATURN"]  
  
# angle reference source  
Aref = "CRAB"
```

List of d-term calibrators (unpolarized)  
and angle reference source.  
Basically, you don't need to change this

< mogaba\_pipe\_run.py > // bad-scan flagging

```
flag_scan1 = [  
# Pol_1  
# [scannum, {channum:[subchans]}],  
    (1)      (2)      (3)  
# epoch 1 (2011-11-21)  
[775918, {0:[4,10], 1:[2,6,7], 2:[2], 3:[0,1,2,3,8]}],  
[769400, {0:[3,4,5,6,10,11,13,14,15], 1:[1,2,3,9,10,11,12], 2:[5,6,7,8,9,10], 3:[6,12,15]}],  
[770472, {0:[0,9,12,13,14,15], 1:[12]}],
```

(1): scan number

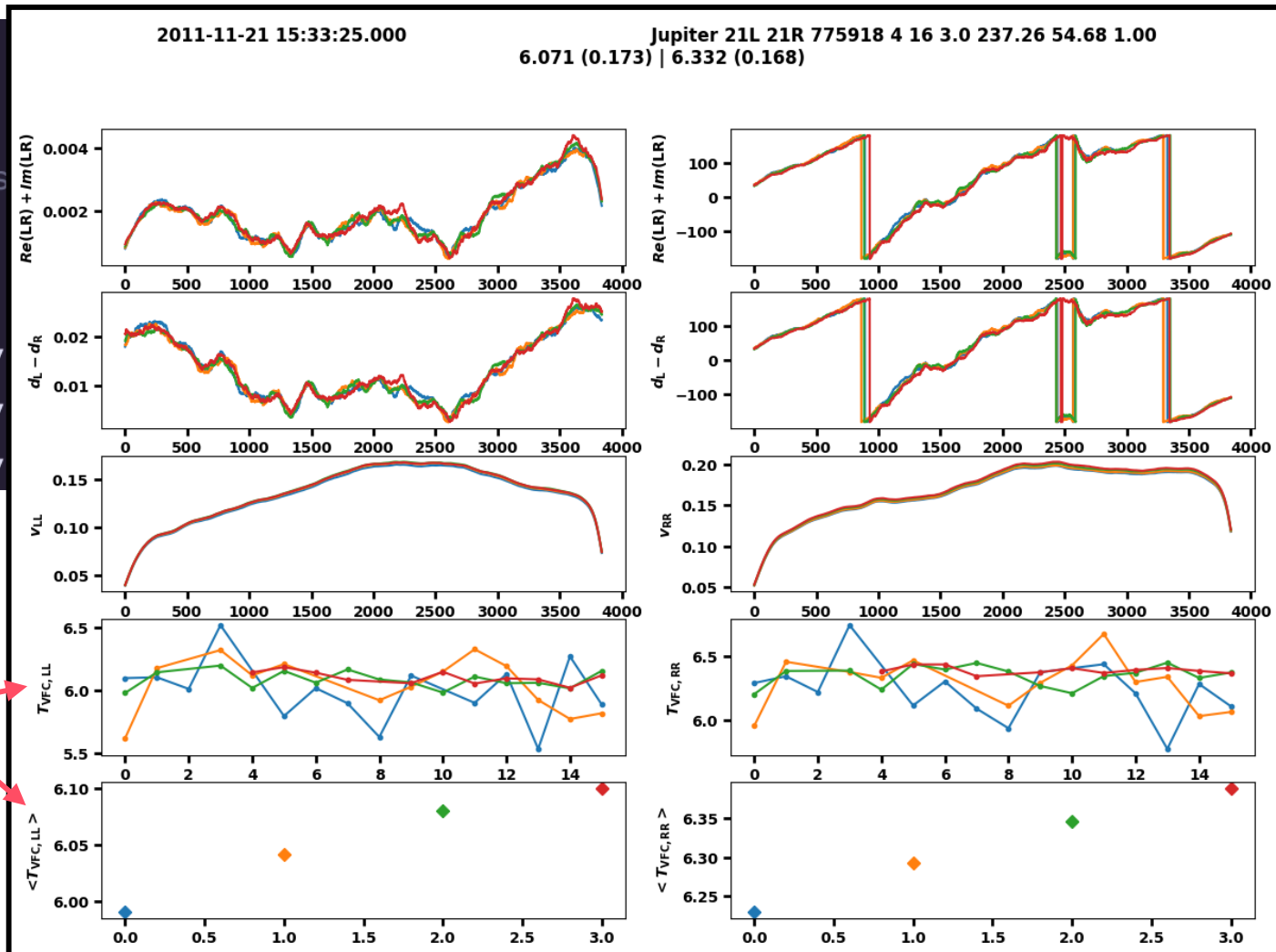
(2): main channel number(s)

(3): sub channel number(s)

< mogaba\_pipe\_run.py > // bad-scan flagging

```
flag_scan1 = [
# Pol_1
# [scannum, {channum:[subchans
(1)      (2)      (3)
# epoch 1 (2011-11-21)
[775918, {0:[4,10], 1:[2,6,7],
[769400, {0:[3,4,5,6,10,11,13,
[770472, {0:[0,9,12,13,14,15],
```

(1): scan number  
(2): main channel number(s)  
(3): sub channel number(s)



< CS data > // ('./data\_cs/<freq>/' )

|    |            |           |      |           | (1)     | (2)     | (3)     |          |         |         | (4)   |       | (5)      | (6)     |          |         |
|----|------------|-----------|------|-----------|---------|---------|---------|----------|---------|---------|-------|-------|----------|---------|----------|---------|
|    | Source     | MJD       | Nseq | El        | Peak_L  | dPeak_L | stdT_L  | Peak_R   | dPeak_R | stdT_R  | eta_L | eta_R | S_L      | dS_L    | S_R      | dS_R    |
| 0  | BLLAC      | 55886.502 | 1    | 59.862619 | 0.64783 | 0.00519 | 0.02386 | 0.68427  | 0.0052  | 0.02464 | 0.589 | 0.617 | 8.76861  | 0.07025 | 8.84152  | 0.06719 |
| 1  | 3C454.3    | 55886.525 | 1    | 56.247721 | 0.84068 | 0.00686 | 0.02955 | 0.88     | 0.00754 | 0.04095 | 0.589 | 0.617 | 11.3789  | 0.09285 | 11.37057 | 0.09743 |
| 2  | VR422201   | 55886.548 | 1    | 47.612183 | 0.65089 | 0.00718 | 0.03412 | 0.69651  | 0.00468 | 0.01909 | 0.589 | 0.617 | 8.81002  | 0.09718 | 8.99968  | 0.06047 |
| 3  | 3C111      | 55886.571 | 1    | 63.015776 | 0.2266  | 0.01366 | 0.049   | 0.23927  | 0.00974 | 0.04637 | 0.589 | 0.617 | 3.06711  | 0.18489 | 3.09163  | 0.12585 |
| 4  | CRAB       | 55886.595 | 1    | 50.402281 | 9.52494 | 0.13245 | 0.61757 | 10.21302 | 0.12479 | 0.62394 | 0.589 | 0.617 | 128.9234 | 1.79276 | 131.9635 | 1.61242 |
| 5  | 0528+134   | 55886.616 | 1    | 52.846915 | 0.14273 | 0.00329 | 0.01248 | 0.1454   | 0.00299 | 0.01297 | 0.589 | 0.617 | 1.9319   | 0.04453 | 1.87873  | 0.03863 |
| 6  | Jupiter    | 55886.645 | 1    | 55.596886 | 6.14241 | 0.02337 | 0.09415 | 6.43565  | 0.02496 | 0.10073 | 0.589 | 0.617 | 83.13967 | 0.31632 | 83.15571 | 0.32251 |
| 7  | 0235+164   | 55886.668 | 1    | 60.08919  | 0.10594 | 0.00429 | 0.02006 | 0.11182  | 0.00311 | 0.01366 | 0.589 | 0.617 | 1.43394  | 0.05807 | 1.44484  | 0.04018 |
| 8  | 4C28.07    | 55886.695 | 1    | 57.472456 | 0.30901 | 0.00453 | 0.01946 | 0.32688  | 0.00384 | 0.01734 | 0.589 | 0.617 | 4.18256  | 0.06132 | 4.22365  | 0.04962 |
| 9  | 3C84       | 55886.719 | 1    | 60.699939 | 2.23237 | 0.01056 | 0.04678 | 2.31245  | 0.011   | 0.04298 | 0.589 | 0.617 | 30.21591 | 0.14293 | 29.87941 | 0.14213 |
| 10 | 0716+71    | 55886.741 | 1    | 50.623183 | 0.20375 | 0.00316 | 0.01268 | 0.2288   | 0.00335 | 0.01399 | 0.589 | 0.617 | 2.75783  | 0.04277 | 2.95635  | 0.04329 |
| 11 | J0730-1141 | 55886.769 | 1    | 43.961812 | 0.28385 | 0.00401 | 0.01563 | 0.28369  | 0.00307 | 0.0132  | 0.589 | 0.617 | 3.84201  | 0.05428 | 3.66559  | 0.03967 |
| 12 | Mars       | 55886.798 | 1    | 44.294965 | 0.17879 | 0.00448 | 0.01896 | 0.17759  | 0.00454 | 0.02124 | 0.589 | 0.617 | 2.41999  | 0.06064 | 2.29466  | 0.05866 |
| 13 | 0836+710   | 55886.822 | 1    | 51.926995 | 0.24693 | 0.00355 | 0.01605 | 0.25207  | 0.00374 | 0.01608 | 0.589 | 0.617 | 3.34228  | 0.04805 | 3.25702  | 0.04832 |
| 14 | 3C286      | 55886.876 | 1    | 38.836773 | 0.21783 | 0.00527 | 0.02506 | 0.2229   | 0.00576 | 0.02605 | 0.589 | 0.617 | 2.94841  | 0.07133 | 2.88011  | 0.07443 |
| 15 | 3C273B     | 55886.903 | 1    | 44.23655  | 1.59789 | 0.01093 | 0.03894 | 1.64582  | 0.01207 | 0.03981 | 0.589 | 0.617 | 21.628   | 0.14794 | 21.26581 | 0.15596 |
| 16 | 3C286      | 55886.924 | 2    | 53.264797 | 0.19303 | 0.00634 | 0.01415 | 0.19624  | 0.00552 | 0.01347 | 0.589 | 0.617 | 2.61273  | 0.08581 | 2.53564  | 0.07132 |
| 17 | OJ287      | 55886.953 | 1    | 55.027542 | 0.50727 | 0.00523 | 0.01973 | 0.52282  | 0.00479 | 0.02076 | 0.589 | 0.617 | 6.86608  | 0.07079 | 6.75541  | 0.06189 |
| 18 | 4C39.25    | 55886.976 | 1    | 59.972585 | 0.73572 | 0.00862 | 0.03599 | 0.76954  | 0.00608 | 0.02244 | 0.589 | 0.617 | 9.95823  | 0.11667 | 9.94331  | 0.07856 |
| 19 | 3C279      | 55887.001 | 1    | 50.046528 | 2.2541  | 0.01136 | 0.04742 | 2.3605   | 0.01142 | 0.0501  | 0.589 | 0.617 | 30.51003 | 0.15376 | 30.50027 | 0.14756 |
| 20 | 3C345      | 55887.023 | 1    | 45.452993 | 0.44568 | 0.00622 | 0.03001 | 0.47022  | 0.00691 | 0.02852 | 0.589 | 0.617 | 6.03244  | 0.08419 | 6.07576  | 0.08928 |
| 21 | 4C38.41    | 55887.045 | 1    | 52.851915 | 0.27897 | 0.00519 | 0.02617 | 0.27523  | 0.00333 | 0.01388 | 0.589 | 0.617 | 3.77596  | 0.07025 | 3.55628  | 0.04303 |
| 22 | 1510-089   | 55887.073 | 1    | 44.978903 | 0.44091 | 0.0172  | 0.06399 | 0.46797  | 0.00938 | 0.03465 | 0.589 | 0.617 | 5.96787  | 0.23281 | 6.04669  | 0.1212  |

(1): peak antenna temperature [K] // (MCMC fitting)  
(2): antenna temperature fitting error [K] // (MCMC fitting)  
(3): standard deviation of residual profile [K]

(4): calculated antenna aperture efficiency  
(5): flux density [Jy]  
(6): flux density error [Jy]



< PS data > // ('./data\_ps/<freq>/<date>/' )

(1)

(2)

(3)

(4)

(5)

(6)

(7)

(8)

|   | Source     | MJD       | El        | Ti      | dTi     | Tp      | dTp     | PM     | dPM   | PA        | dPA      | PA_c      | dPA_c    | Si        | dSi     | Sp       | dSp     | eta     |
|---|------------|-----------|-----------|---------|---------|---------|---------|--------|-------|-----------|----------|-----------|----------|-----------|---------|----------|---------|---------|
| 0 | Jupiter    | 55886.648 | 54.683218 | 6.19767 | 0.07581 | 0       | 0       | 0      | 0     | 0         | 0        | 0         | 0        | 81.96204  | 1.00257 | 0        | 0       | 0.60284 |
| 0 | CRAB       | 55886.597 | 50.959922 | 9.99439 | 0.0069  | 1.16262 | 0.00484 | 11.633 | 0.048 | -41.04388 | 0.23539  | 152       | 0        | 132.17244 | 0.09121 | 15.37527 | 0.06399 | 0.60284 |
| 0 | BLLAC      | 55886.505 | 58.891421 | 0.69858 | 0.01534 | 0.04659 | 0.00046 | 6.669  | 0.047 | -5.46227  | 0.4949   | 7.5816    | 0.54803  | 9.23848   | 0.20281 | 0.61608  | 0.00609 | 0.60284 |
| 0 | 3C454.3    | 55886.527 | 55.73043  | 0.85899 | 0.00541 | 0.03925 | 0.00072 | 4.569  | 0.059 | 84.66845  | 0.70449  | 97.71233  | 0.74277  | 11.35987  | 0.07157 | 0.51908  | 0.00955 | 0.60284 |
| 0 | VR422201   | 55886.551 | 46.645462 | 0.69171 | 0.01149 | 0.0461  | 0.00071 | 6.665  | 0.072 | -5.74167  | 0.39655  | 7.30221   | 0.46115  | 9.14763   | 0.15189 | 0.60966  | 0.00934 | 0.60284 |
| 0 | 3C111      | 55886.573 | 63.546366 | 0.25308 | 0.00791 | 0.00571 | 0.00046 | 2.254  | 0.129 | -45.83963 | 2.60746  | 147.20425 | 2.61806  | 3.34685   | 0.10462 | 0.07545  | 0.0061  | 0.60284 |
| 0 | 0528+134   | 55886.624 | 54.788321 | 0.16444 | 0.01158 | 0.00137 | 0.00046 | 0.835  | 0.197 | -64.86039 | 2.52462  | 128.18349 | 2.53557  | 2.17468   | 0.15313 | 0.01816  | 0.00607 | 0.60284 |
| 0 | 0235+164   | 55886.675 | 58.144902 | 0.0745  | 0.01074 | 0.00208 | 0.00086 | 2.788  | 0.819 | -67.96462 | 10.70615 | 125.07925 | 10.70873 | 0.98529   | 0.14204 | 0.02747  | 0.01142 | 0.60284 |
| 0 | 4C28.07    | 55886.699 | 56.373308 | 0.3117  | 0.00645 | 0.01707 | 0.00084 | 5.478  | 0.19  | -48.26226 | 0.93883  | 144.78162 | 0.96789  | 4.12208   | 0.08534 | 0.2258   | 0.01107 | 0.60284 |
| 0 | 3C84       | 55886.72  | 60.194881 | 2.27665 | 0.00672 | 0.00464 | 0.00051 | 0.204  | 0.016 | 2.50855   | 7.19037  | 15.55242  | 7.19422  | 30.10789  | 0.08881 | 0.0613   | 0.00673 | 0.60284 |
| 0 | 0716+71    | 55886.749 | 50.92086  | 0.21425 | 0.00333 | 0.00452 | 0.00042 | 2.111  | 0.137 | -16.25593 | 4.44031  | 176.78795 | 4.44655  | 2.83343   | 0.04398 | 0.0598   | 0.00551 | 0.60284 |
| 0 | J0730-1141 | 55886.777 | 44.348418 | 0.26991 | 0.00358 | 0.00292 | 0.0012  | 1.082  | 0.314 | 58.29007  | 15.58618 | 71.33395  | 15.58796 | 3.56942   | 0.04729 | 0.03861  | 0.01586 | 0.60284 |
| 0 | Mars       | 55886.801 | 45.334332 | 0.15959 | 0.0108  | 0.00136 | 0.00074 | 0.854  | 0.33  | -11.62358 | 16.64164 | 1.4203    | 16.6433  | 2.11047   | 0.14288 | 0.01802  | 0.00985 | 0.60284 |
| 0 | 0836+710   | 55886.829 | 52.061737 | 0.25443 | 0.00569 | 0.00502 | 0.00066 | 1.975  | 0.184 | -78.44408 | 4.19992  | 114.5998  | 4.20651  | 3.36476   | 0.0753  | 0.06644  | 0.00876 | 0.60284 |
| 0 | 1222+216   | 55886.855 | 42.372311 | 0.2188  | 0.01177 | 0.00146 | 0.00093 | 0.669  | 0.301 | 77.33667  | 18.98007 | 90.38054  | 18.98153 | 2.89353   | 0.15564 | 0.01937  | 0.01233 | 0.60284 |
| 0 | 3C286      | 55886.883 | 40.915196 | 0.20687 | 0.00382 | 0.02368 | 0.00088 | 11.448 | 0.301 | 21.11449  | 1.60668  | 34.15837  | 1.62383  | 2.73581   | 0.05058 | 0.3132   | 0.01166 | 0.60284 |
| 0 | 3C273B     | 55886.905 | 44.686803 | 1.63497 | 0.01087 | 0.07967 | 0.00097 | 4.873  | 0.042 | -55.14079 | 0.39748  | 137.90309 | 0.46195  | 21.62194  | 0.14381 | 1.05361  | 0.01287 | 0.60284 |
| 0 | 3C286      | 55886.932 | 55.390348 | 0.20656 | 0.00563 | 0.02417 | 0.00086 | 11.7   | 0.296 | 23.03495  | 1.15956  | 36.07882  | 1.18321  | 2.73164   | 0.07446 | 0.3196   | 0.01142 | 0.60284 |
| 0 | OJ287      | 55886.956 | 53.960181 | 0.5215  | 0.00969 | 0.03472 | 0.00096 | 6.658  | 0.13  | -37.24195 | 1.11283  | 155.80193 | 1.13745  | 6.89665   | 0.12813 | 0.4592   | 0.01272 | 0.60284 |
| 0 | 4C39.25    | 55886.979 | 58.948938 | 0.76804 | 0.00429 | 0.00114 | 0.00113 | 0.149  | 0.104 | -30.08555 | 18.71251 | 162.95832 | 18.71399 | 10.15709  | 0.05679 | 0.01513  | 0.01498 | 0.60284 |
| 0 | 3C279      | 55887.002 | 50.146754 | 2.27745 | 0.00357 | 0.09653 | 0.00077 | 4.238  | 0.024 | -55.2321  | 0.29999  | 137.81178 | 0.38132  | 30.11856  | 0.04718 | 1.27651  | 0.0102  | 0.60284 |
| 0 | 3C345      | 55887.025 | 45.965879 | 0.44597 | 0.0207  | 0.01802 | 0.00085 | 4.041  | 0.135 | 46.14085  | 0.47821  | 59.18473  | 0.53301  | 5.89785   | 0.27369 | 0.23836  | 0.01129 | 0.60284 |
| 0 | 4C38.41    | 55887.052 | 54.866442 | 0.19527 | 0.01242 | 0.00329 | 0.00043 | 1.684  | 0.156 | 27.10746  | 2.64426  | 40.15133  | 2.65472  | 2.58242   | 0.16431 | 0.0435   | 0.00571 | 0.60284 |
| 0 | 1510-089   | 55887.08  | 45.697896 | 0.43003 | 0.05663 | 0.01361 | 0.00129 | 3.165  | 0.211 | 56.99356  | 2.15813  | 70.03744  | 2.17093  | 5.687     | 0.74891 | 0.18001  | 0.017   | 0.60284 |

(1): antenna temperature (error) [K] // Stokes I  
(2): antenna temperature (error) [K] // linear polarization  
(3): degree of linear polarization (error) [%]  
(4): crab-uncorrected polarization angle (error) [deg]

(5): crab-corrected polarization angle (error) [deg]  
(6): flux density [Jy] (error) // Stokes I  
(7): flux density [Jy] (error) // linear polarization  
(8): applied antenna aperture efficiency