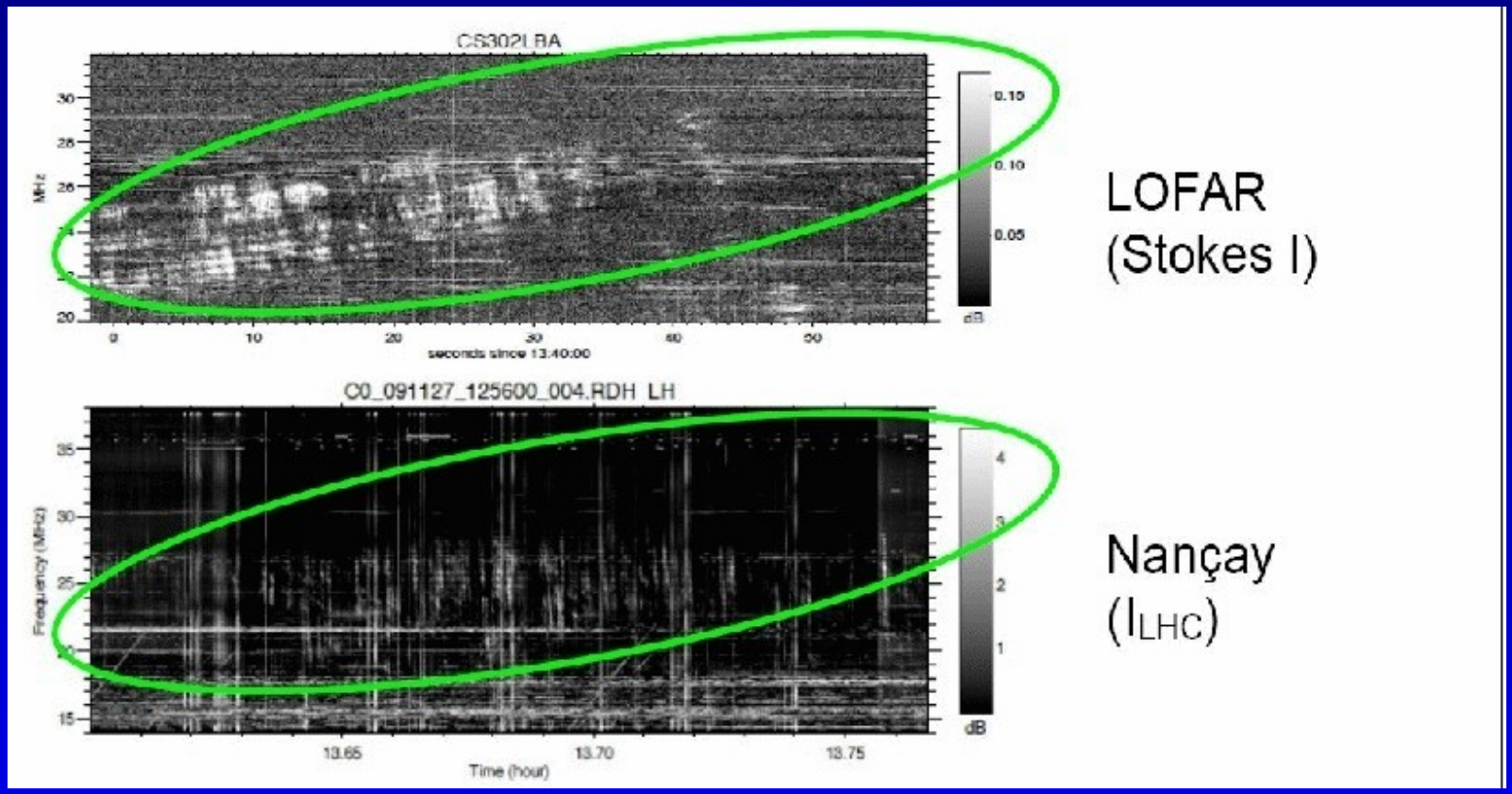
Preliminary results of the TKP/Planets Working Group (PPBW 12/2009 & TBW 04/2010) - continued -

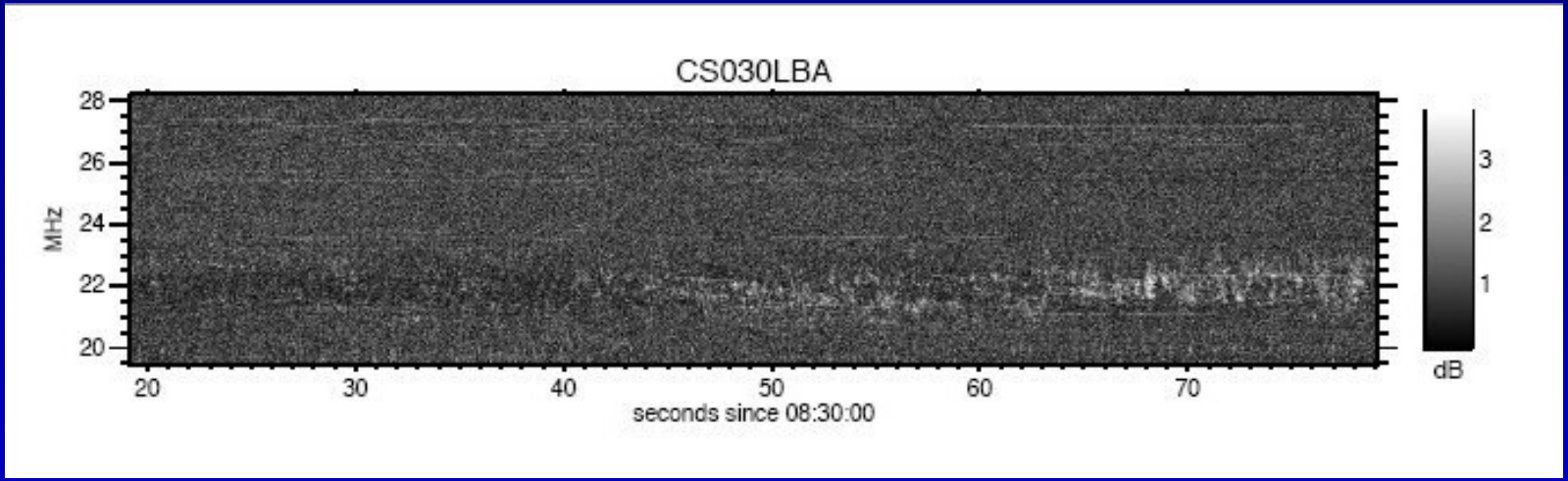
J.-M. Grießmeier, J. Girard, W. Majid, P. Zarka

griessmeier@astron.nl

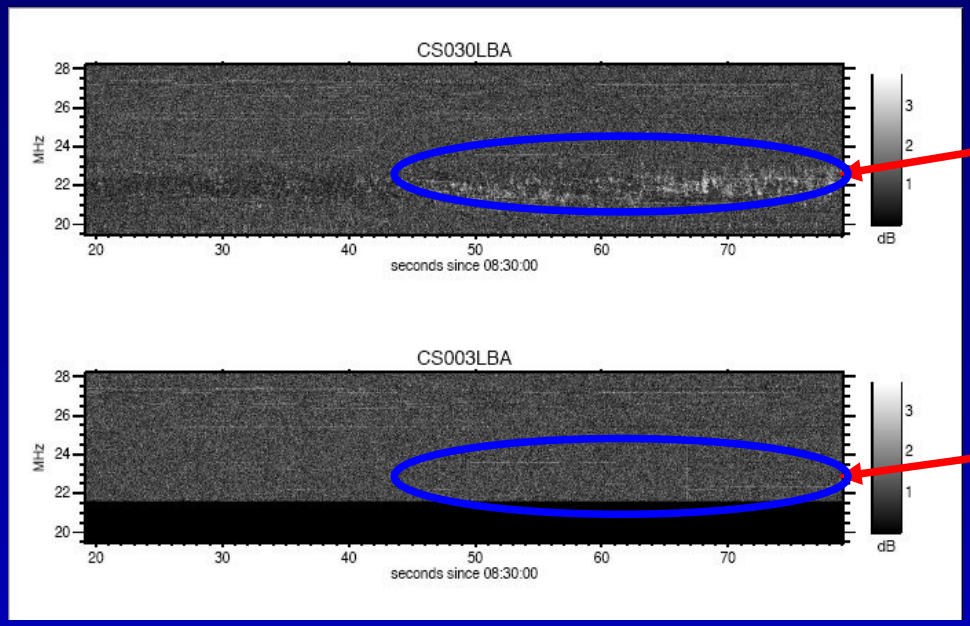
Jupiter observation 11/2009:
emission very weak : 0.1-0.3 dB above background, (4-6 dB at Nançay, comparable effective area)



Jupiter observation 04/2010:
emission better: 3 dB above background



Jupiter observation

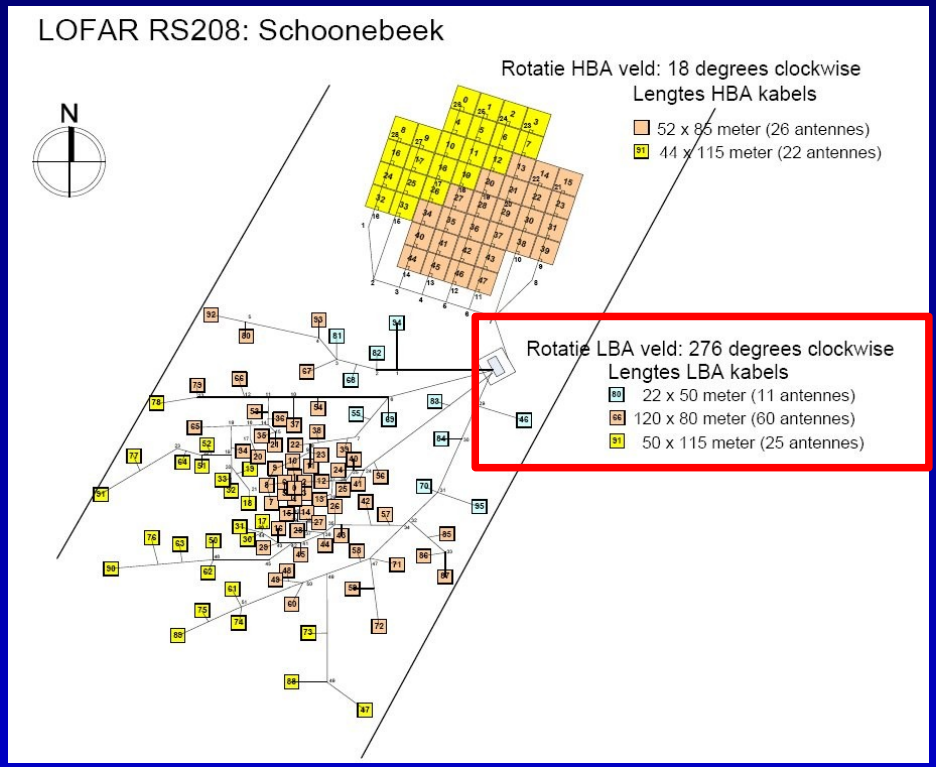


Jupiter

no Jupiter

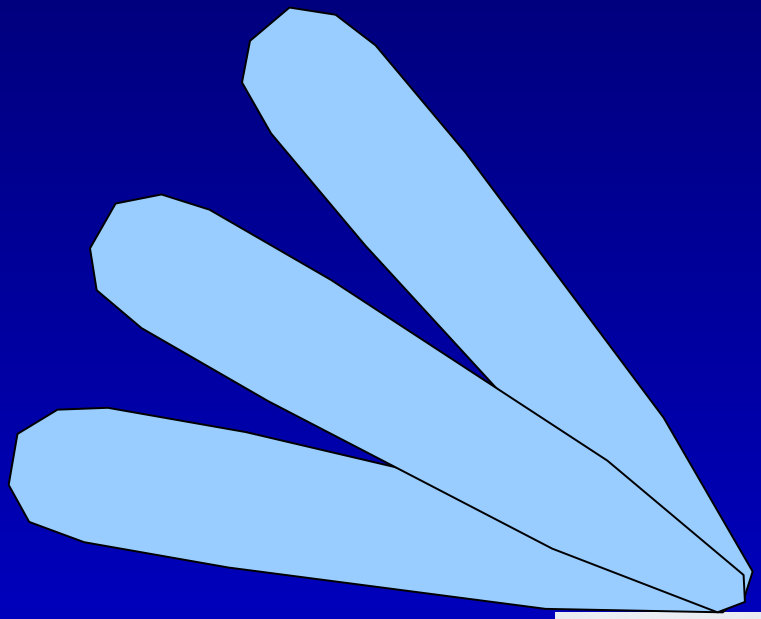
- Jupiter very bright (>10^6 Jy)
  ⇒ should be detectable by all stations
- in 11/2009 data, Jupiter was seen by 4 stations
- is this a pointing problem?
- cable length compensation OFF since 19/01/2010

Cable length compensation



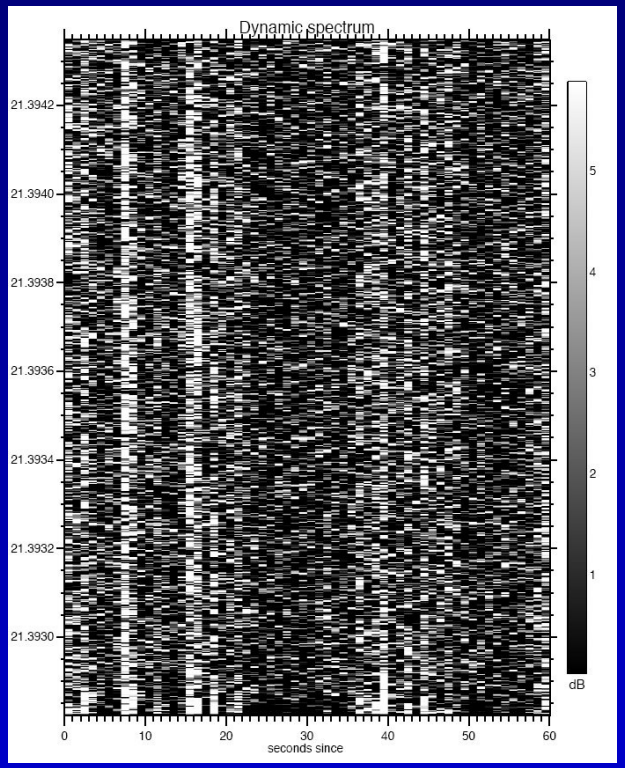
- 3 different cable length
- cable length compensation OFF since 19/01/2010

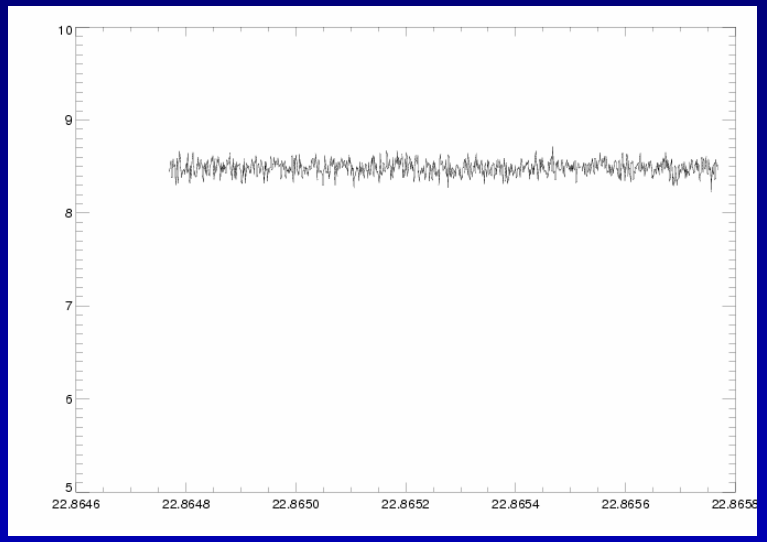
Cable delays



- weaker signal expected
- but not absence of signal!

High resolution dynamic spectrum



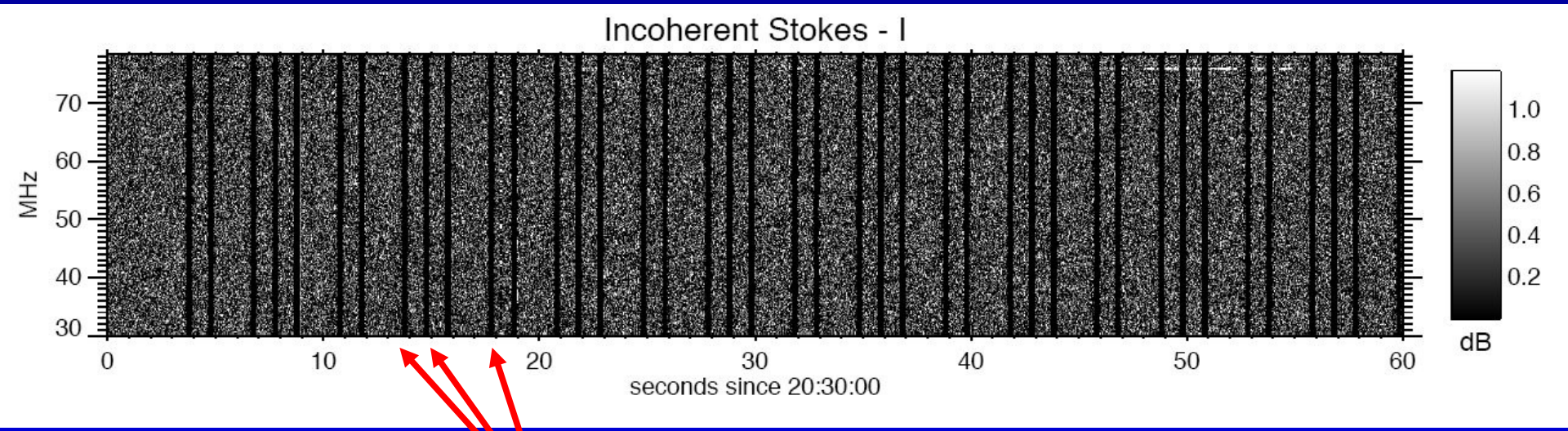


Jupiter data, processed for SETI piggybacking (for A. Penny)

⇒ 1 Hz x 1 sec resolution

Saturn observation

- 10 stations (summed)
- 180 minutes (well chosen!)
- 30-78 MHz
- lightning (known 2-40+ MHz)

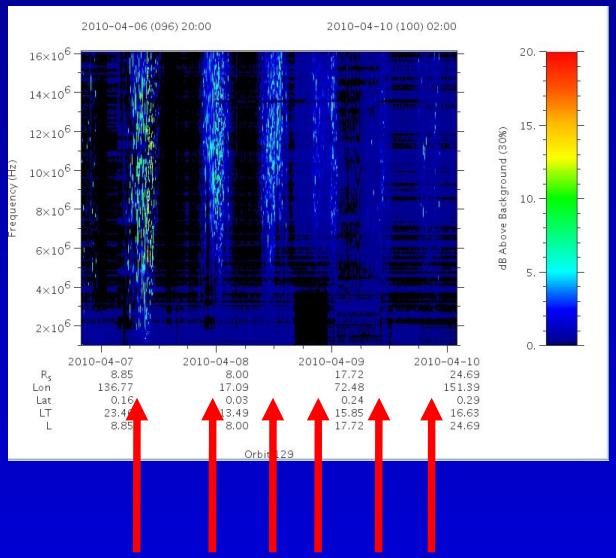


regular data gaps (understood)

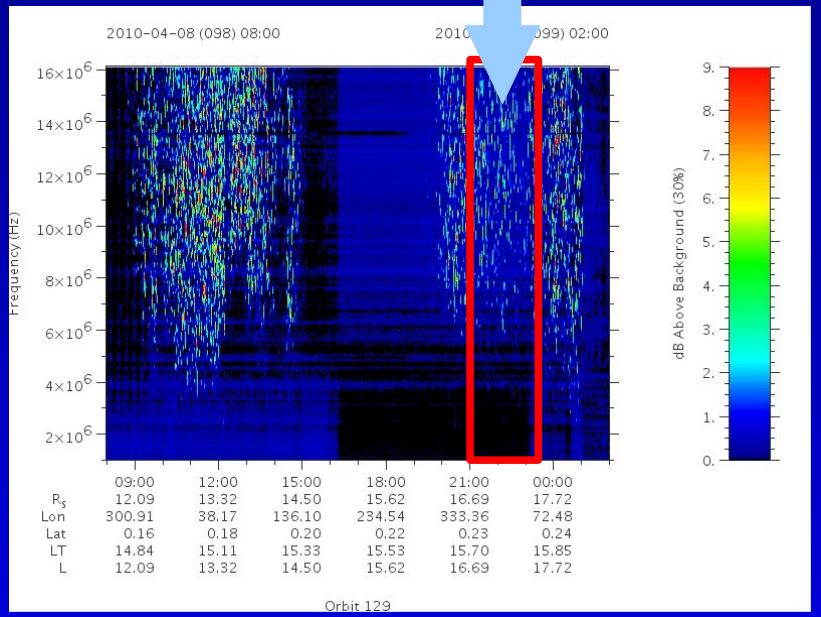
cable length compensation OFF ⇒ ???

Saturn observation

- storm ephemeris from Cassini observations
- 3h obs. caught bright emission
- if no pointing problems:
  first obs. up to 78 MHz, 0.1 msec



variability!



Detection? Under analysis...

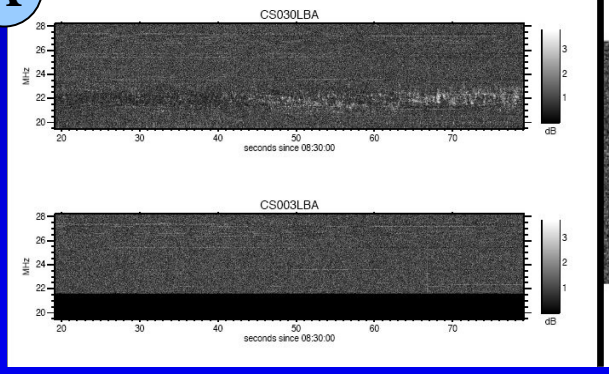
data transfer (slow!) ⟹ need ≥ 1 IDL license

Summary (Planet observations)

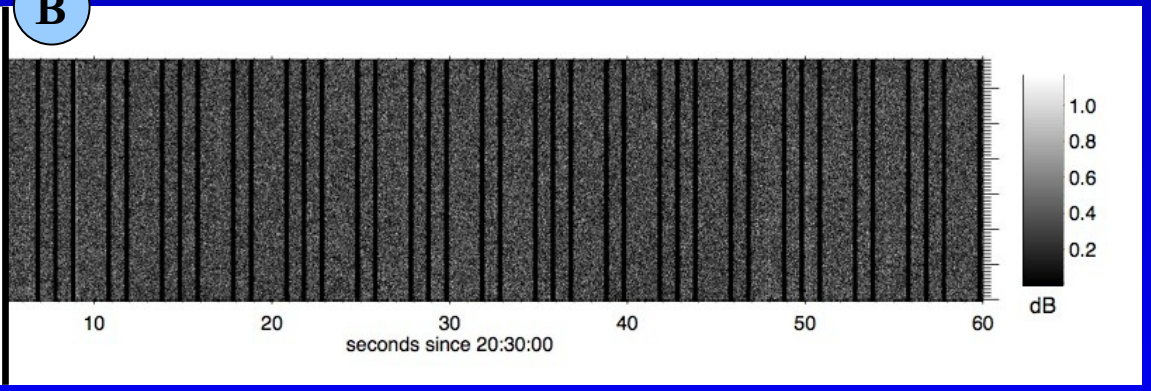
Observations:

- **A** Jupiter (20 min, 2.0 TB) ⇒ monitoring?
- **B** Saturn (2h, 1.5 TB) ⇒ analysis

A



B



Summary (Planet observations)

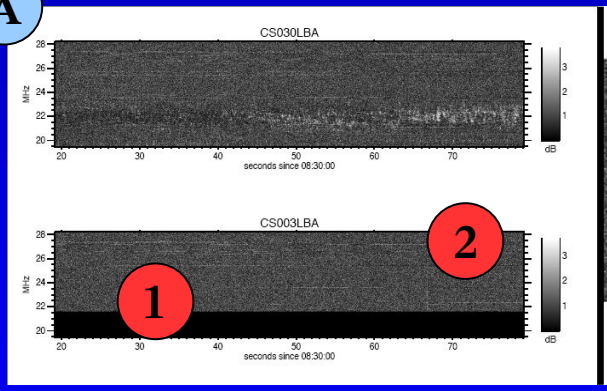
Observations:

- A Jupiter (20 min, 2.0 TB) ⇒ monitoring?
- B Saturn (2h, 1.5 TB) ⇒ analysis

Bugs:

1. empty subbands ⇒ workaround
2. Jupiter nondetection in 3/4 stations ⇒ ???
3. frequent data gaps ⇒ fixed

A



B