GREAT

Cycle 1 Observing

U.U. Graf

(on behalf of the GREAT team)

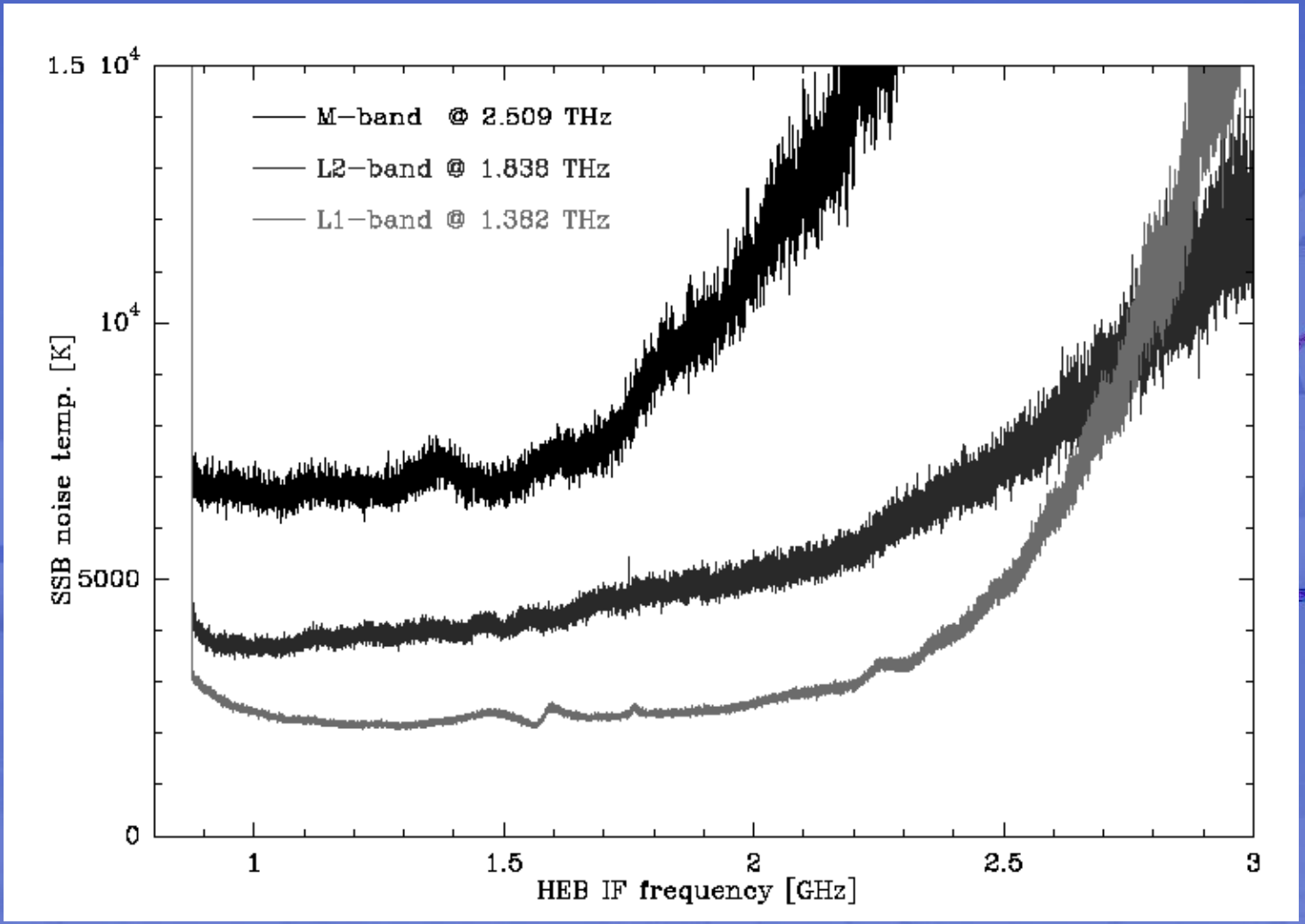
GREAT

GREAT can simultaneously observe in any two of the following channels:

- L1: 1262–1385 GHz and 1432–1523 GHz
- L2: 1800–1910 GHz
- Ma: 2495–2519 GHz
- (Mb: 2700 GHz – available soon)
- (H: 4700 GHz – available soon)

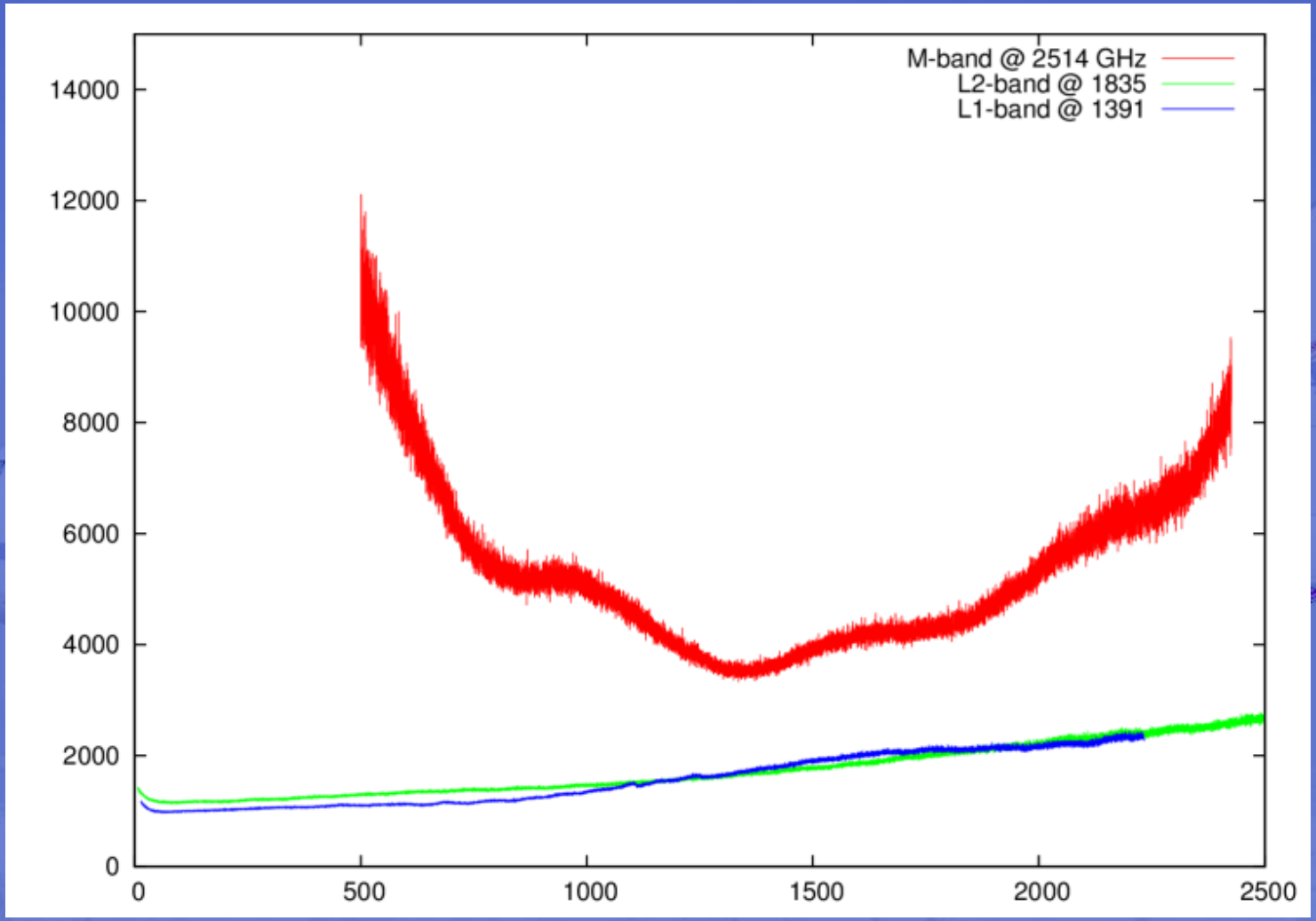
Instrument sensitivity in all frequency bands has been improved drastically over the past 1.5 years!

GREAT Performance 2011

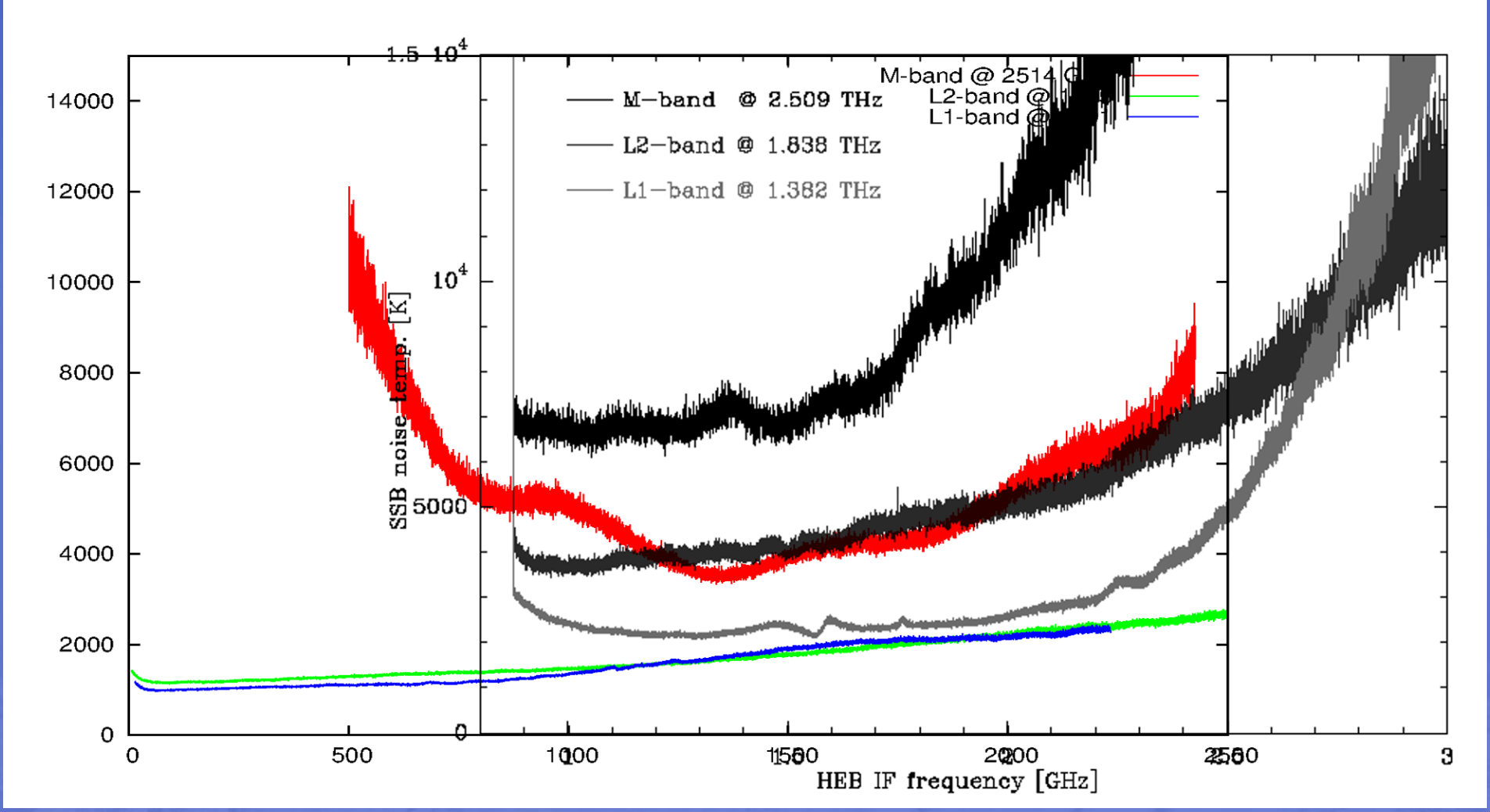


Heymick et al. 2012

GREAT Performance 2013

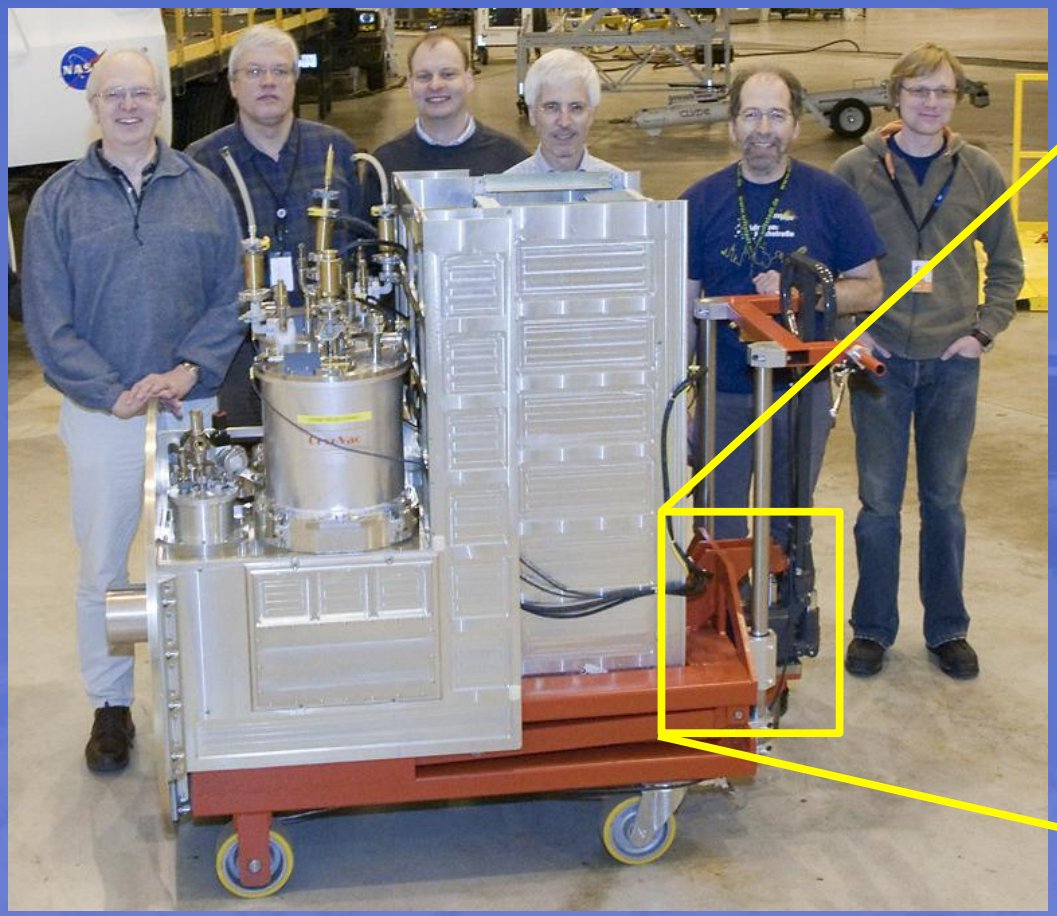


Comparison 2013/2011



Desaster strikes!

On installation day GREAT's mounting cart dies!



Recovery

With the help of everyone we get the cart fixed and GREAT installed before the end of the day!

- SI team buys an alternative lifting device
- Safety & QA are very supportive in finding a viable solution
- NASA workshop (Allan Crocker and Ken Carter are heroes!) builds hardware to adapt new device to cart
- USRA team and SOFIA ground crew help all over the place (although they do not believe that Dryden safety will buy it!)

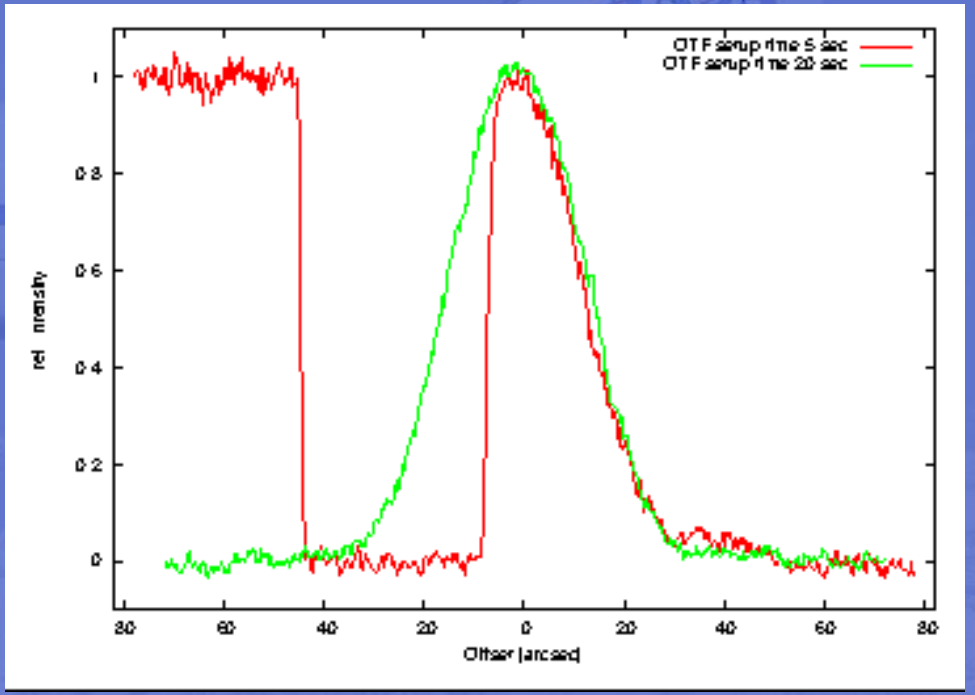
Et voilà: le nouveau cart!

Brought to you by your local hardware store

Passed load testing and now carries a NASA calibration tag.

FLT #100

- ↘ Leg #1 (Jupiter): very inefficient due to MCCS overheads when moving in SIRF coordinates. Just barely got done before turn.
- ↓ Leg #2: Lost because of MCCS reboot
- ↗ Rest of the flight slowly improving
- ↓ FC and UPS outage shortly after touchdown!



Flight #101

↓ FC and UPS outage during flight preparation!

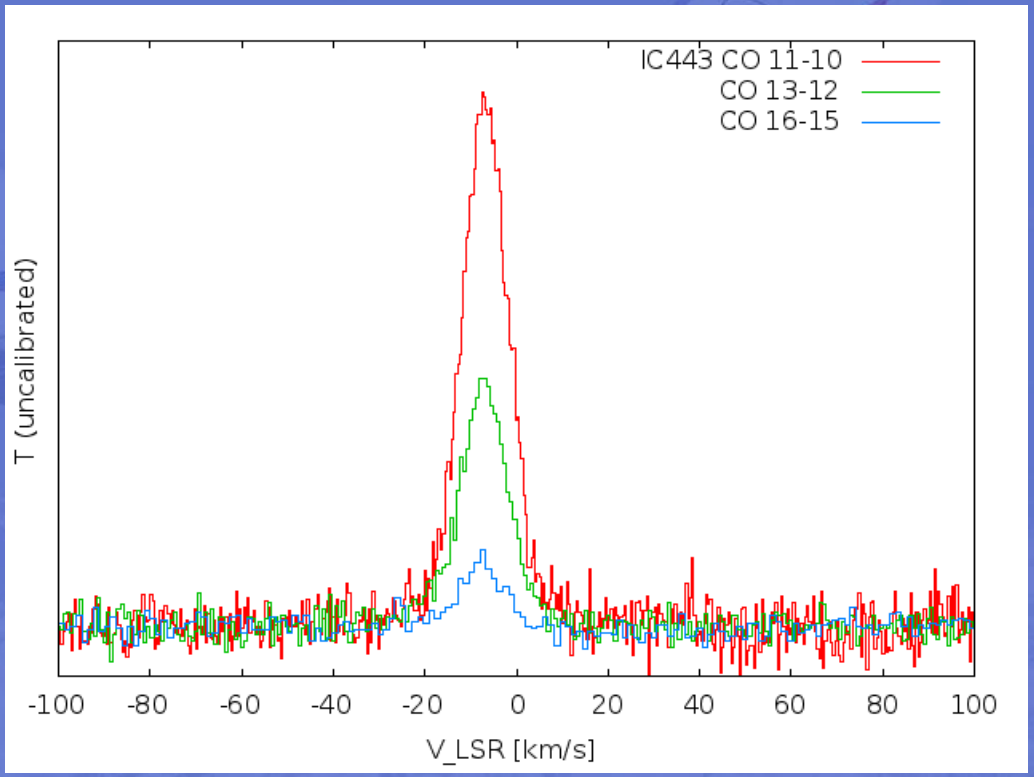
↑ Smooth flight no hiccups

↑ Integration efficiency > 60% on some legs

↑ No MCCS reboot
(first time ever?)

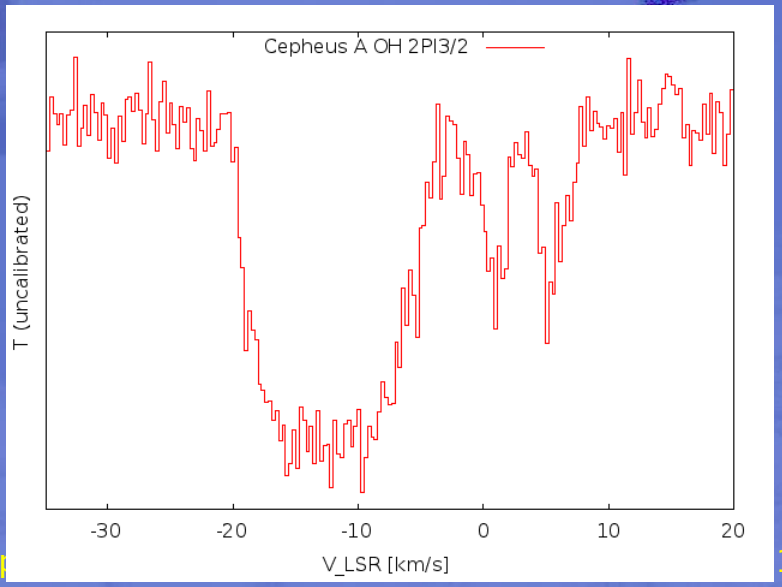
Example: IC443

total time < 40 min



Flight #102

- ↓ New safety rules almost ruin the flight (SI team had to abort alignment of newly installed Ma channel because procedure processing took so long that no certified SI person was available any more)
- ↘ Again lots of MCCS related problems in first half of flight
- ↓ One science leg lost because of MCCS reboot
- ↗ Rest of the flight slowly improving



Summary

+ MCCS is more stable
+ Pointing stability is much better
+ Observing efficiency has improved
- MCCS is still not stable enough
- Still see lots of erratic behaviour (e.g. random jumps out of chop/nod sequence)
- Motions in SIRF are hopelessly inefficient
? How do we count "successful flight hours"? started statistics, but need to agree on how to count various phases.

Summary (cont.)

- Badging does not work at all! 0/12 people got their badge right away.
- Safety requirements are getting more bizarre by the minute.