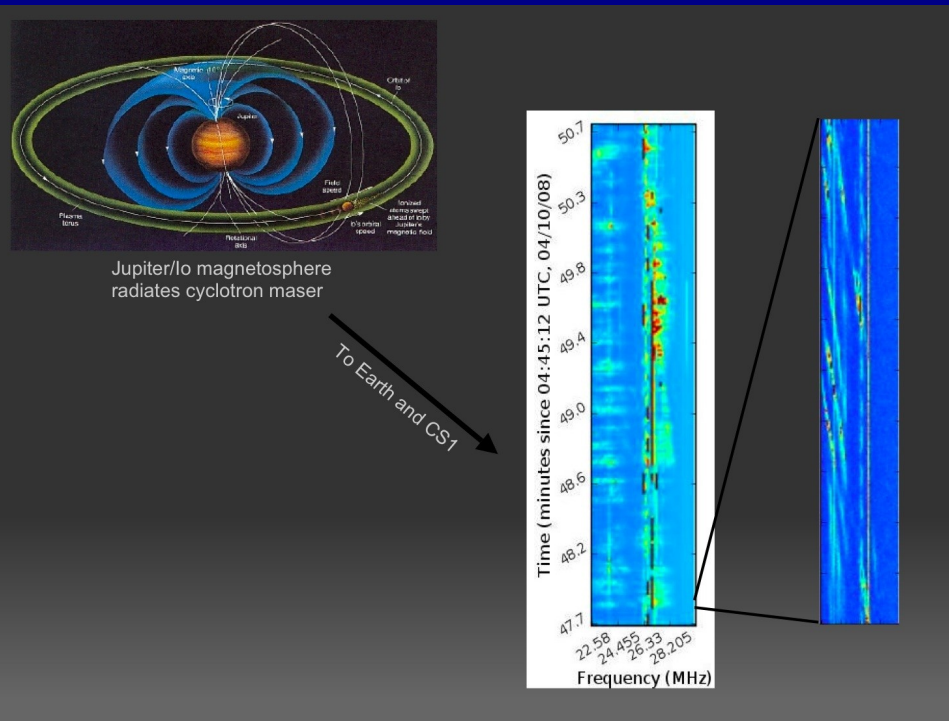




Joint Jupiter observation with CS010 & Nancay

Jean-Mathias Grießmeier

Progress

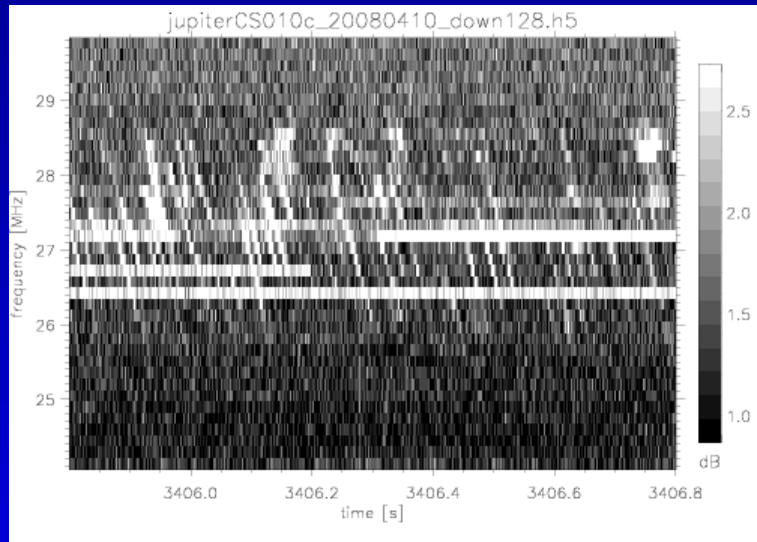


- observation: 04/2008
- daily image: 05/2008
- dyn. spec.: 07/2008

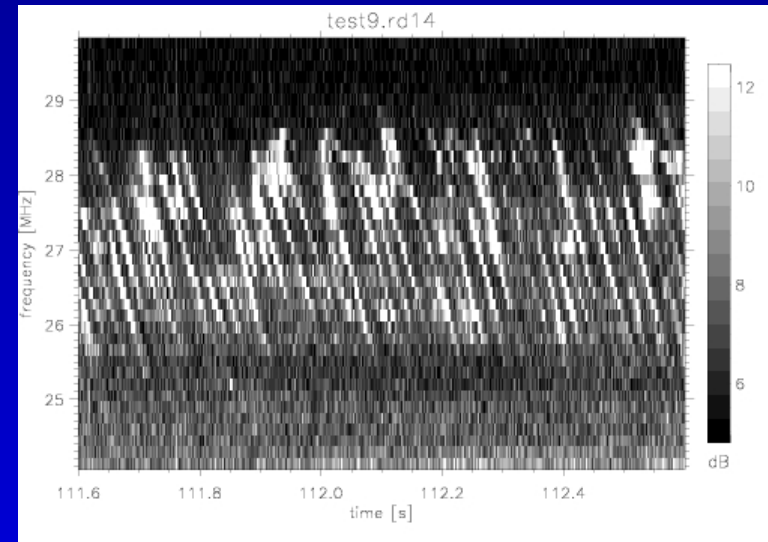
- data analysis: 01/2009
- LOFAR status meeting (0.8 ms, 156 kHz): 02/2009
- LOFAR status meeting (6.4 μ s, 156 kHz): **now**

Simultaneous observation 10/04/2008

LOFAR (CS10)

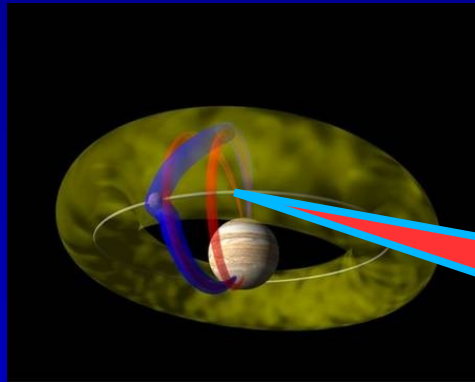


Nancay (NDA)



Time delay

measured time difference $\Delta t = 1.9$ msec



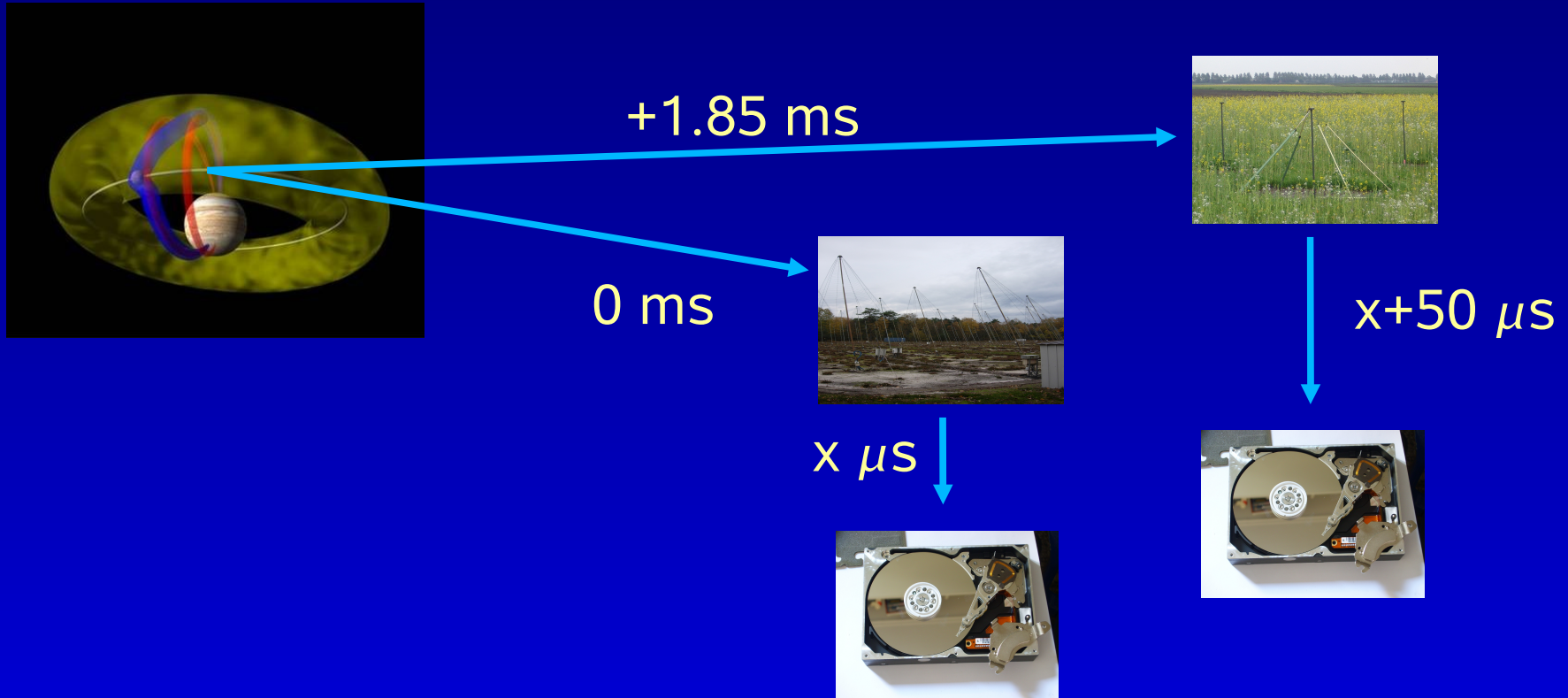
2554.88634 s

2554.88478 s



\Rightarrow lightpath difference $\Delta t = 1.85$ ms

Time delay



⇒ time delay could be explained slow/fast electronic

⇒ to be checked by repeating observation

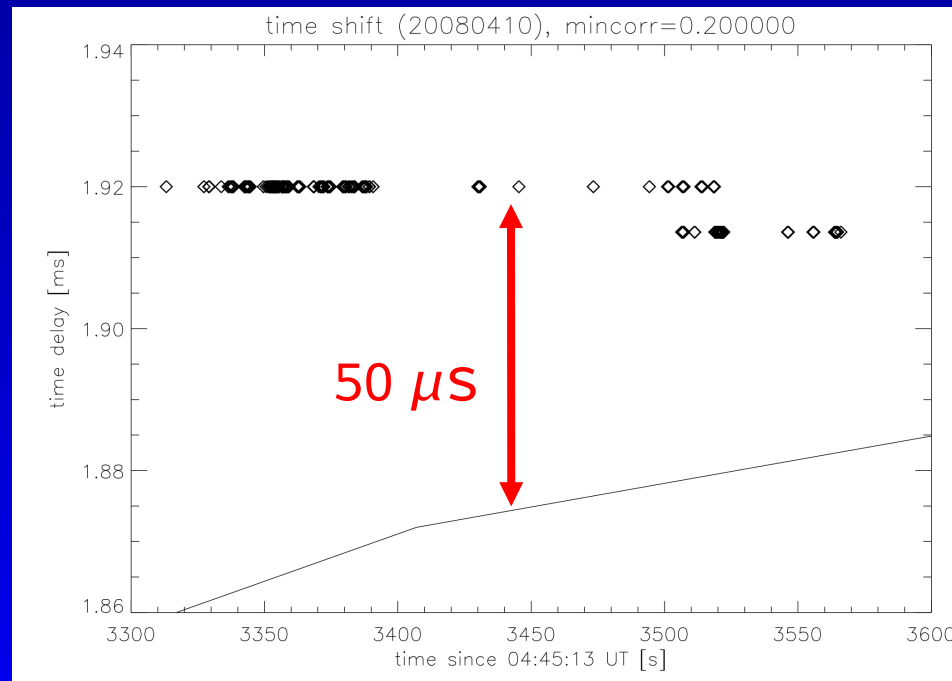
Stability of time delay

- is the time delay constant?
- a clock drift was seen for ITS!

stable over 300 sec



6.4 μs

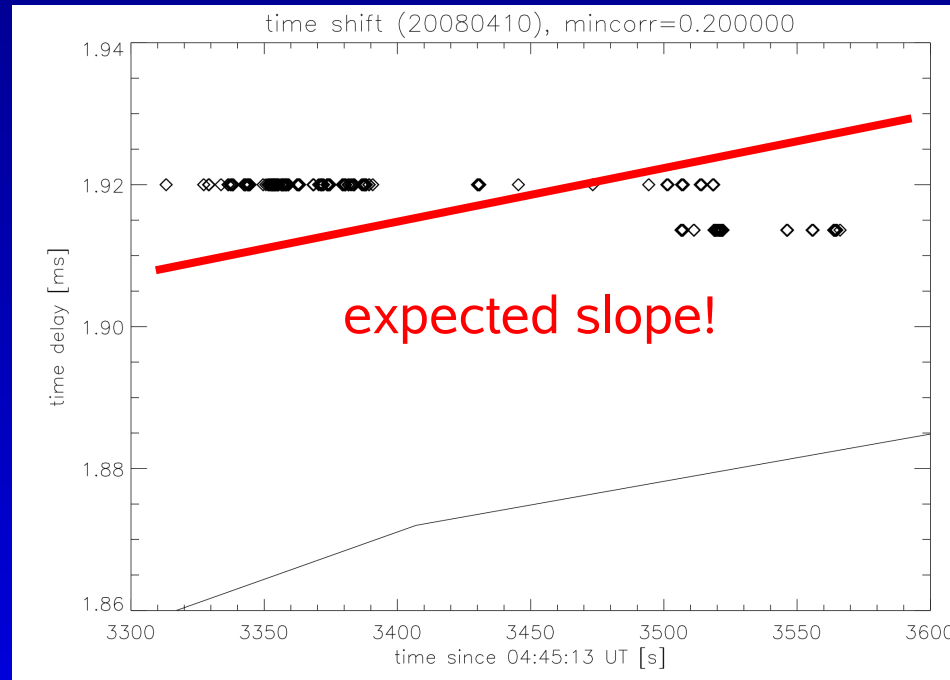


Stability of time delay

too stable over 300 sec



6.4 μS

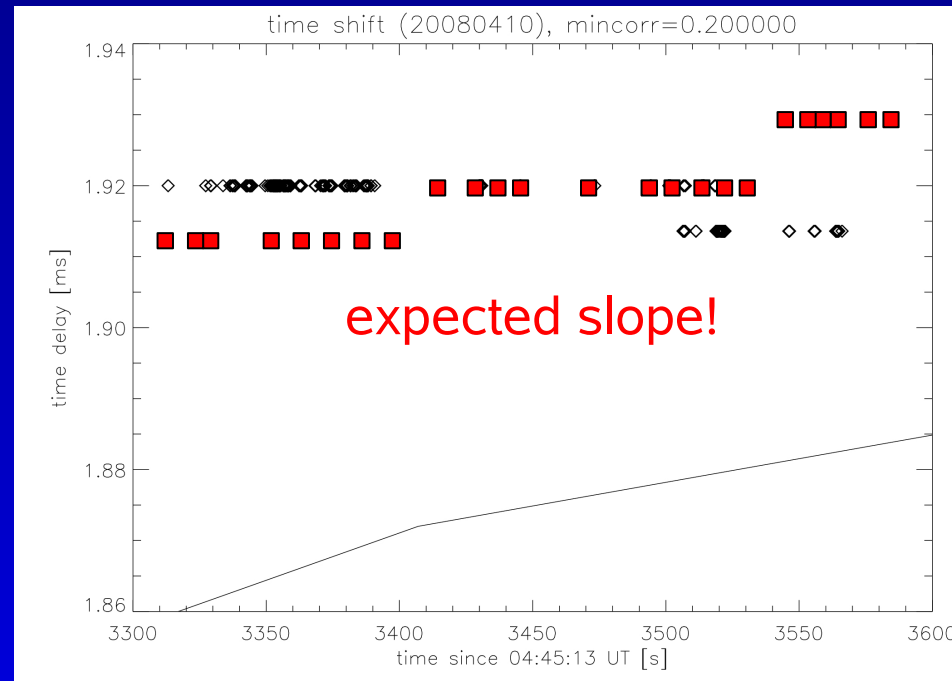


Stability of time delay

too stable over 300 sec

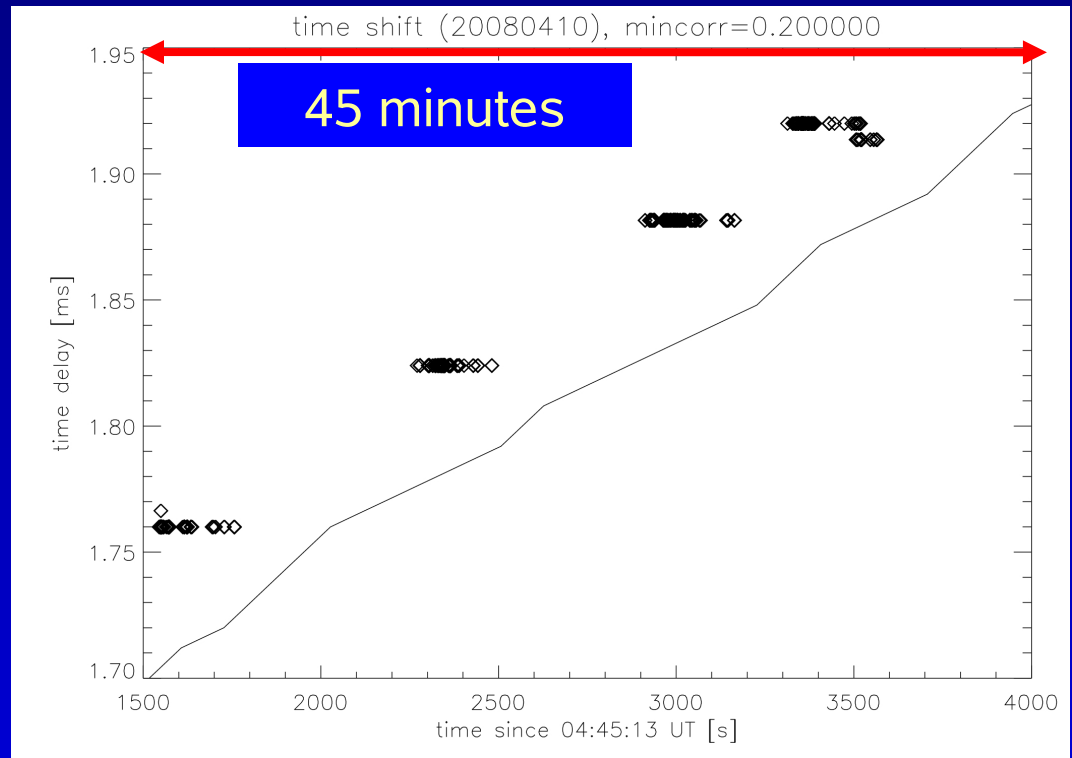


6.4 μ S



Time delay

even more puzzling:



⇒ constant difference of $50 \mu\text{s}$

⇒ time delay constant within each observation (should not!)

⇒ between observations, the trend is correct!

Next steps

- improved time resolution ($6.4 \mu\text{s}$) – done!
- check absolute timing – done!
- check for relative clock drift – done!
- understand relative clock drift \Rightarrow reobserve
- improved time resolution (TBBs)
- polyphase-filtered Nancay-data (Kalpana Singh)
- correlate Exloo-Effelsberg (Nicolas Pradel)

- tried 10/04/2008 (many problems, got to know system)
- planned 30/03/2008 (was forgotten)
- tried 06/04/2009 (encountered a clock frequency bug)
- planned 21/04/2009 (problems, had to be cancelled)
- planned 08/05/2009 (cancelled)

- tried 10/04/2008 (many problems, got to know system)
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- planned 08/05/2009 (cancelled)
- wait for network connection to Effelsberg
- wait for BG/P
- try again!

Thanks!

The team:

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Michiel Brentjens

Kalpana Singh

Casey Law

James Anderson

JMG

Laurent Denis

Joseph Masters

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Cedric Dumez-Viou

Nicolas Pradel

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