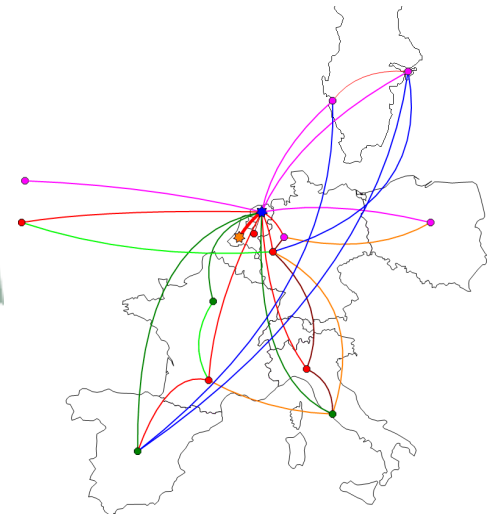


The HIFI mapping zig-zag problem

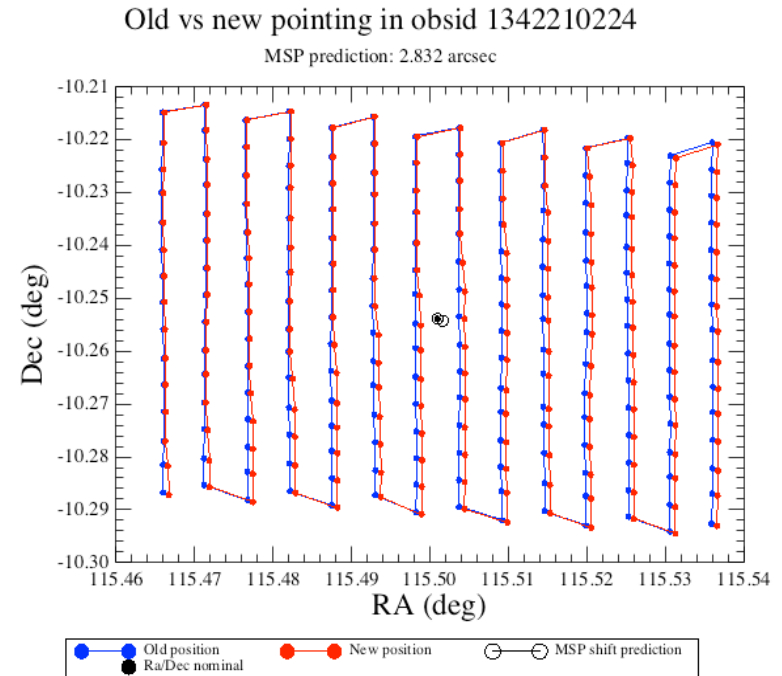
V. Ossenkopf, P. Morris, D. Teyssier



Netherlands Institute for Space Research

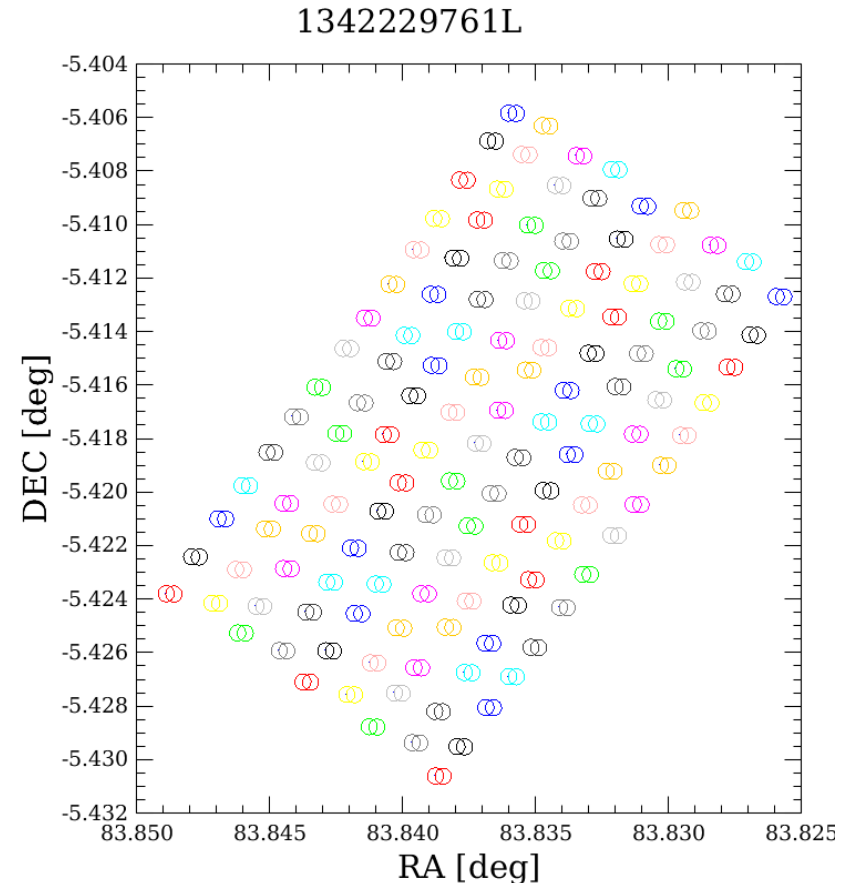
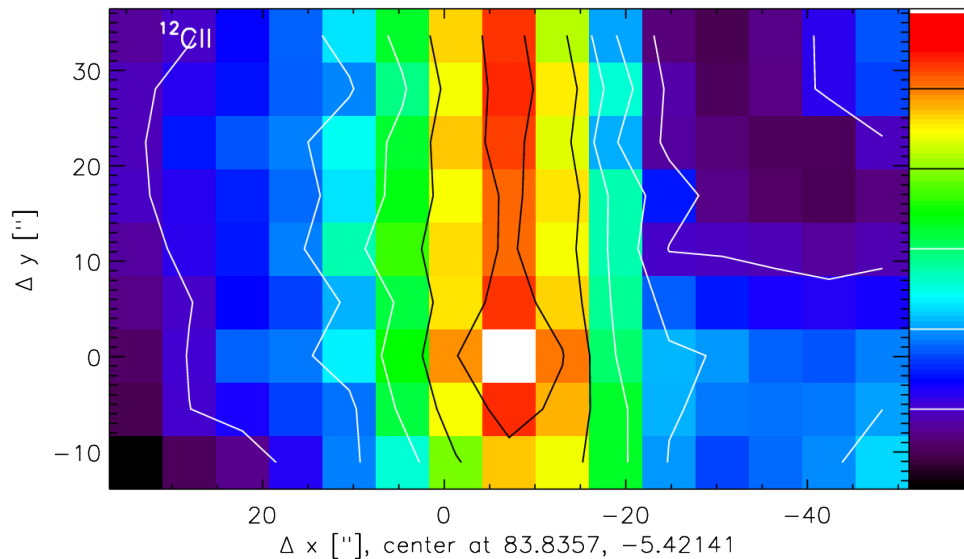
- Remember: There are two zig-zag problems for HiFi

- Commanding of readouts cannot be at sufficiently fine granularity
 → Readouts are mutually slightly shifted in neighbouring lines
 → We map a slightly larger area than requested by the user
- When regridding the downlink pointing data to a regular grid with **any software** a zig-zag residual remains
 - Only detected in Orion Bar



August 2012

- When regridding the downlink pointing data to a regular grid with **any software** a zig-zag residual remains

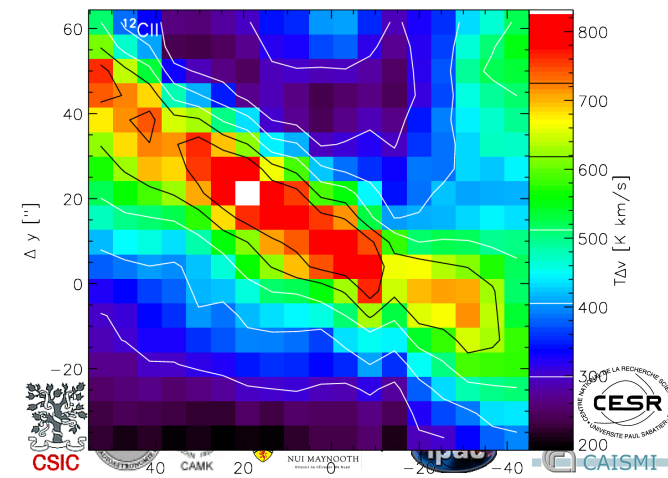


- In the Orion Bar, the contrast is big enough and the structure is sufficiently known to make the effect measurable

- The effect is not a timing problem, but fix in spatial offset:

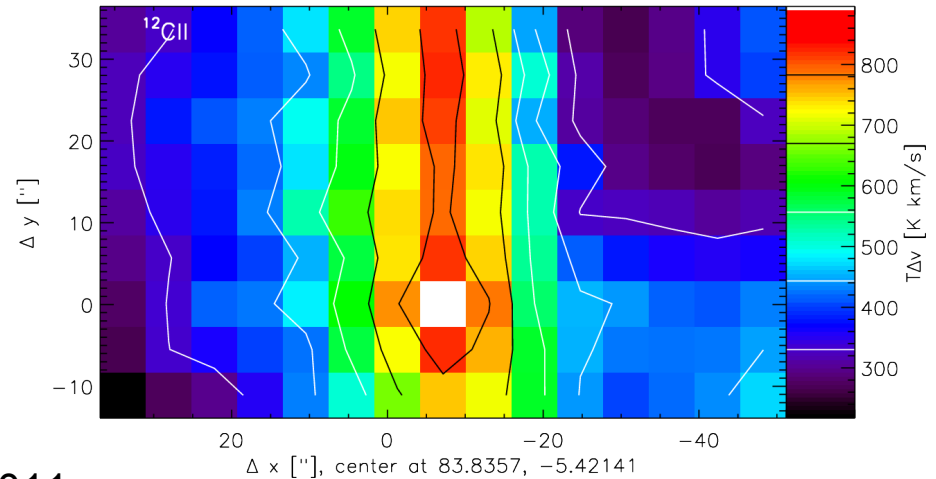
obsid	steps	best shift	timing offset	pointing offset
1342203243	5.4"/3s	+0.13 +/-0.02	0.39+/-0.06s	0.70+/-0.11"
1342229761	5.7"/3s	+0.09 +/-0.025	0.27+/-0.08s	0.51+/-0.14"
1342229762	5.7"/2s	+0.09 +/-0.025	0.18+/-0.05s	0.51+/-0.14"
1342229763	11.0"/2s	+0.04 +/-0.025	0.08+/-0.05s	0.44+/-0.22"
1342229764	3.0"/3s	+0.12 +/-0.025	0.36+/-0.08s	0.36+/-0.08"
1342229760	5.7"/3s	+0.10 +/-0.04	0.30+/-0.12s	0.57+/-0.23"

- It also occurs for different scanning directions:



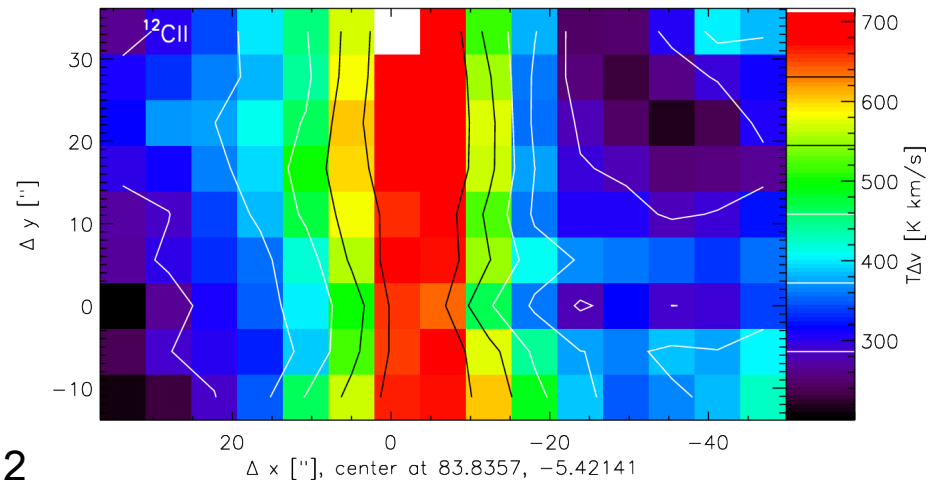
- Updates of ACMS over last year

- New measurements in March 2012



August 2011

- Zig-zag disappeared



March 2012

- But: The zig-zag problem is back
- Repetition in August reproduces problem
 - Same magnitude as before
→ seasonal dependence
 - Size 0.4-0.5"
- Problem still not understood (HCSS-14194)

