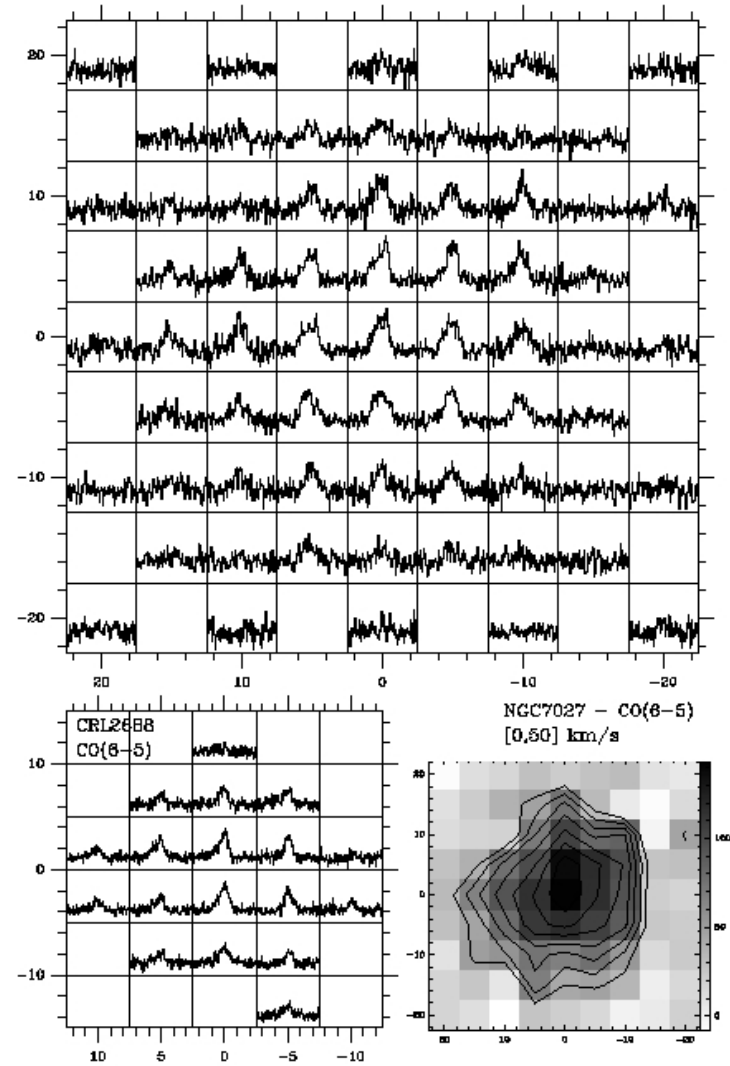
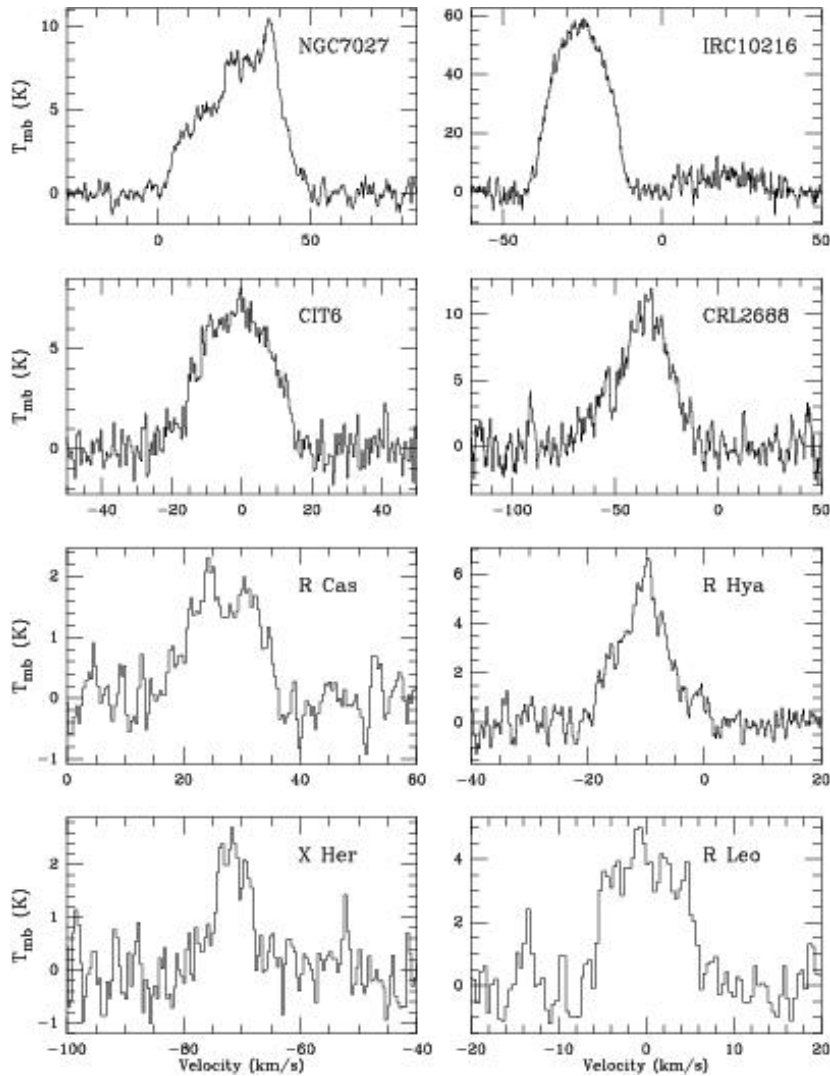


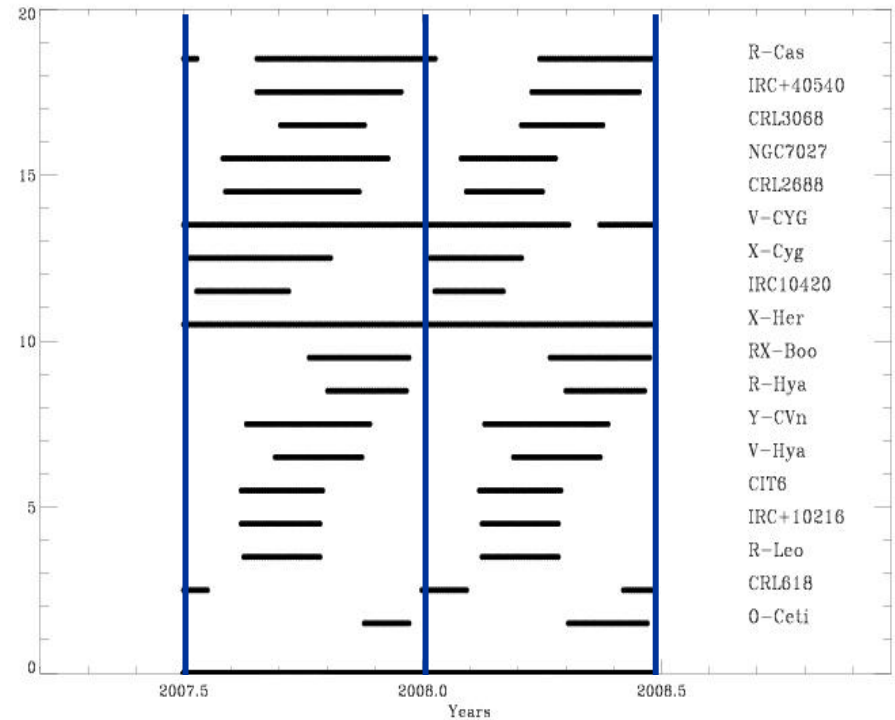
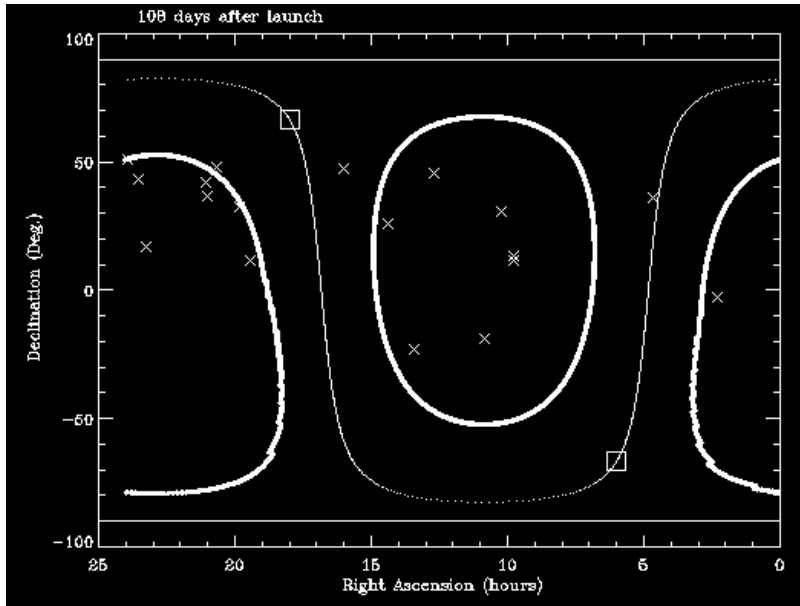
Secondary calibrators for HIFI

- HIFI is planning to use molecular emission from evolved star envelopes to serve as *reference* spectra to be visited regularly over the mission
 - Will focus on CO lines
 - Data-base built on the basis of large mm data (CO(1-0) and (2-1))
 - The best candidates in the submm were observed at CSO in CO(6-5).
 - 19 sources observed, 9 mapped (see Teyssier et al. 2006)
 - Line strengths between 1.5K and 40K (in a CSO beam) – most point-like, assumed non-variable in line emission
- proved the suitability of about of dozen of them as in-flight secondary calibrators
- we have developed envelope models to predict emission in higher transitions

CSO campaign: examples



CSO campaign: source visibilities



- the evolved star calibrator list **is** close to completion
- IF [
- optimized observing scheduling works well
 - complementary targets in the southern sky are indeed to be found

Next steps and questions

- Back in Feb 06 the AGB GTKP team met to for coordination purpose. There we discussed the plans for preparatory ground-based programs:

- HIFI gathered a list for candidates in the southern hemisphere for an APEX program. List was passed to APEX team – most are now part of their pointing sources but no flux known at high frequencies

- APEX proposal (Decin & Olofsson) was mentioned (23 sources), but no news...good news ?

Source	R.A.		Dec.		CO line intensity (K)				Ref.
	(2000.0)				J=1-0	J=2-1	J=3-2	J=4-3	
V1943 Sgr	20 06 55.24	-27 13 29.8	0.12	0.53	3.45	-	-	(1)	
R Dor	04 36 45.6	-62 04 37.8	0.38	3.53	6.2	-	-	(1)	
L ² Pup	07 13 32.32	-44 38 23.1	0.08	1.1	3.8	-	-	(1)	
R Crt	11 00 33.85	-18 19 29.6	-	1.2	2.0	2.65	-	(1)	
SW Vir	13 14 04.38	-02 48 25.1	0.31	1.3	3.0	2.54	-	(1)	
V744 Cen	13 39 59.81	-49 56 59.8	-	0.14	1.1	-	-	(1)	
Pi1 Gru	22 22 44.21	-45 56 52.6	0.6	2.0	-	-	-	(2)	
AFGL5440	18 06 42.1	-23 44 24	1.5	1.8	-	-	-	(3)	
AFGL1922	17 07 58.1	-24 44 31	1.9	3.2	-	-	-	(3)	
AFGL4202	14 52 24.3	-62 04 20	0.6	1.2	-	-	-	(3)	
HD104901	12 04 46.98	-61 59 48.6	5.8	-	-	-	-	(4)	
VYCMa	07 22 58.33	-25 46 03.2	-	Contam.	3.0	-	-	(5)	
AFGL5379	17 44 24.0	-31 55 35	-	-	2.8	-	-	(5)	
VX Sgr	18 08 04.05	-22 13 26.6	-	Contam.	2.4	1.2	-	(5)	
AFGL4078	07 45 02.8	-71 19 43	0.65	3.5	-	-	-	(6)	
AFGL4211	15 11 41.9	-48 20 01	-	1.9	-	-	-	(6)	
NGC6302	17 13 44.41	-37 06 11.2	-	1.8	-	-	-	(6)	
NGC6072	16 12 58.8	-36 13 38	-	1.1	-	-	-	(6)	
R Hor	02 53 52.77	-49 53 22.7	-	0.8	3.1	-	-	(7)	
R Scl	01 26 58.09	-32 32 35.5	2.4	2.2	-	-	-	(8)	
U Hya	10 37 33.27	-13 23 04.4	0.5	4.5	-	-	-	(8)	

IRAS 10197-5750
AFGL 6815
NAME RED RECTANGLE
OH 231.8+4.2
V* S SCT
V* X PAV
V* W HYA
V* RZ SGR
V* R SCT
V* R LEO
AFGL 2343
V* R SCL
V* U ANT
* PI GRU
V* U HYA
IRC -10529
AFGL 3068
II LUP
V* V HYA
IRC+20370
NML Tau
V* W AQL
IRAS 13428-6232

What about SPIRE ? Can we update ourselves and coordinate further ?