

APEX Proposals

!!!!!! Deadline: March 18th, 18:00 !!!!!!

For periods April 22 – July 20

Proposal submission

- 4 queues, all 2 deadlines/year
 - ESO, open for ESO member states + open skies
 - → DL: 27.3. but for 10.2014 - 4.2015!
 - OSO, open for all
 - DL probably somewhat later than ESO
 - Chile, open for scientists at Chilean institutions
 - DL probably somewhat later than ESO
 - MPG, open for scientists at German institutions
 - → 18.3.

Instrumentation offered

- Facility RX:
 - SHIFI (3 bands, no T2)
 - LABOCA
 - no SABOCA because of ongoing commissioning of A-MKID & Artemis
- PI instruments:
 - FLASH+ (simultaneously 345/460 but indicate if 345 main science focus)
 - CHAMP+ (simultaneously 690/810 but 810 typically 3xTSYS690)

Access to PI instruments

- offered to the open German and Partner communities on a collaborative basis with the PI teams
- Shared risk basis
- Require ***prior*** coordination and approval by PI (contact Rolf Güsten)

General guidelines

- Have clear science goals and explain to a TAC with members from very different fields, focus!
- If continuation, show data, explain status of analysis
- Explain how science goals will be reached
- Give scientific reasons for proposed sensitivity
- Stay within limits of 2 pages of text and 2 pages of tables/figures
- FLASH+ vs SHFI:
 - 2 bands simultaneously
 - 2SB vs SSB/DSB
 - → higher sensitivity, more line combinations

Time estimates: APEX webpages

ON/OFF Integration time estimator	
Heterodyne receiver:	FLASH345 ▾
Frequency:	345 [GHz]
Side Band:	LSB ▾
<input type="radio"/> Full resolution Δv [64k channels] :	0.0265 [km/s]
<input checked="" type="radio"/> Manual resolution Δv :	0.25 [km/s]
Redshift z:	0
Sky Frequency:	345 [GHz]
pwv :	1.5 [mm H ₂ O]
Source elevation:	45 [deg]
rms :	0.1 [K]
<input type="button" value="Process"/>	
Results	
Tau (source elev 45 deg)	0.234
Trec [K] SSB	80.5
Tsys [K] (source elev 45 deg)	278.6
Beam [arcsec]	18.1
Position Switching On time	1.089 [min]
Total Position Switching time	4.463 [min]
Beam Switching On time	1.089 [min]
Total Beam Switching time	4.899 [min]
RMS Calculator	

The (average) elevation of the source, the receiver temperature, required σ (in K), and the spectral resolution, the on-source integration time can be estimated. Also the total time is calculated assuming $t_{\text{off}}=t_{\text{on}}$ and a system observing efficiency of 0.4, i.e. $t_{\text{total}}=(t_{\text{on}} + t_{\text{off}})/0.4$. The system efficiency takes into account both system and setup+calibration overheads.

System overheads include telescope movements, software overheads, observing mode efficiency, etc. Setup + calibration overheads include source acquisition, pointing, focus, receiver tuning and calibration scans.

Time estimates (OTF): APEX webpages

OTF time estimator V6.0

[How to use](#)

Heterodyne receiver: CHAMP690 ▾
Frequency: 690 [GHz]
Resolution $\Delta\nu$: 0.25 [km/s]
pwv : 0.5 [mm H₂O]
Source elevation: 60 [deg]
Length axis in scanning direction: 120 [arcsec]
Length in the orthogonal axis: 120 [arcsec]
rms per beam: 0.5 [K]

Extended Source

Pointing Source

Process as Extended Source

Time per sub map [sec]	39.9
Numbers of submaps between calibration	1
Total map area covered [arcsec ²]	14400
Numbers of submaps	41
Tau (source elev 60 deg)	0.736
Trec [K]	272.3
Tsys [K] (source elev 60 deg)	984.9
Beam [arcsec]	9
Area Beam [arcsec ²]	102.9
Scanning speed [arsec/ s]	3
Num of rows per off	1
Coverage num	1
sigma reach after 1 coverage(s) [K]	0.473
On source time [min,hr]	10.25 0.17
Off source time [min,hr]	7.45 0.12
Calibration time [min,hr]	20.5 0.34
Telescope time [min,hr]	43.5 0.72

Observing runs

March - 2014

Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
TT in Shutdown														ESO OBSERVATIONS																
														LABOCA OPERATIONAL																

April - 2014

Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed											
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30											
ESO OBSERVATIONS	TT	OSO OBSERVATIONS											Chilean Observations				TT		MPIfR OBSERVATIONS																					
LABOCA OPERATIONAL																																					LABOCA OPERATIONAL			

May - 2014

Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat							
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
MPIfR OBSERVATIONS																	ESO OBSERVATIONS			TT		ESO OBSERVATIONS								
LABOCA OPERATIONAL																														

June - 2014

Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon							
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
ESO OBSERVATIONS			OSO OBSERVATIONS										CHILEAN OBSERVATIONS			TT		MPIfR OBSERVATIONS											

July - 2014

Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu							
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
MPIfR OBSERVATIONS																	TT	CHILEAN OBSERVATIONS					ESO OBSERVATIONS							