

Preparing SOFIA Cycle 4 Proposals

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(User Support Group Lead)

SOFIA Observers' Workshop, May 20-21, 2015 ; Mountain View, CA





Cycle 4 Basics

Approximately 500 hours of observing time offered via the US queue, and an additional 80 hours via the German queue.

Infrared instruments - EXES, FIFI-LS, FLITECAM, FORCAST, GREAT, HAWC+.
Optical photometers - HIPO, (FLITECAM/HIPO), FPI+.

Southern hemisphere deployments with two instruments.

\$5.5 million funding available for successful US based investigators.

New category, “Impact Proposals” - multi-year, of order 100 hour requests.
Not surveys!

Observing period will be March 2016 through February 2017.



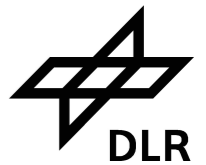
Two Phase Process

Phase I proposals contain the scientific justification and the feasibility analysis for the proposed observing program. The deadline for Cycle 4 Phase I proposal submission is July 10, 2015, at 9:00pm Pacific Time.

The submitted proposals undergo technical review by SOFIA Science Center staff, peer reviews are held separately for the US and German queue proposals, the recommendations are discussed by the Director and Deputy Director and the merged results announced (expected, early October, 2015).

Phase II starts soon after the announcement of results. Each successful proposal is assigned a support scientist, who helps the PI prepare the detailed observing set-up for each of the targets. The submission consists primarily of a set of “Astronomical Observation Requests” (AORs) that are planned and implemented.

This talk focuses on the Phase I proposal preparation!



Webpage and Documents

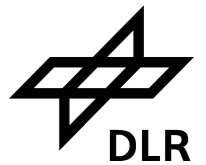
<http://www.sofia.usra.edu/Science/proposals/cycle4/phase1.html>

The screenshot shows the SOFIA Science Center website. The header includes the NASA logo, the text "SOFIA Science Center" and "Stratospheric Observatory for Infrared Astronomy", and a "Home" button. A navigation menu contains "About SOFIA", "News & Updates", "Education & Public Outreach", "Information for Researchers" (highlighted), and "Multimedia Gallery". Below the menu is a banner for "Information for Researchers" with a background image of the SOFIA aircraft. The main content area shows a breadcrumb trail: "Home > Information for Researchers > Proposal Calls > Cycle 4". The title "Cycle 4, Phase I" is prominently displayed. Below the title, the "Proposal submission deadline: July 10, 2015, at 21:00 PDT." is shown in red. Two links are provided: "Download the SOFIA Cycle 4 Call for Proposals Document (version 1, May 1, 2015)" and "SOFIA Observer's Handbook for Cycle 4". On the left side, there is a sidebar menu with "Announcements", "Cycle 4 Information" (selected), "Cycle 3 Information", and "Publications".



Outline

1. Generating the science idea(s).
2. Checking existing and planned observations.
3. Exposure time estimation and feasibility analysis.
4. Proposal preparation and submission.
5. Using SSpot, the Phase II tool.



Generating the science idea(s)

Resources available on our Science webpages:

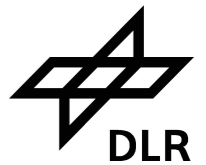
Links to publications

SOFIA Community Teletalks archive

Workshop, Splinter Session presentations

The Science Vision document

Instrument flyers



- About SOFIA
- News & Updates
- Education & Public Outreach
- Information for Researchers
- Multimedia Gallery

Information for Researchers

[Home](#) > Information for Researchers

WELCOME TO THE SOFIA SCIENCE WEB PAGE!

SOFIA Cycle 4 Call for Proposals Released

The links on the left allow navigation to pages that contain information about the observatory, its scientific capabilities, and other matters of interest.

Electronic News Announcements

Please subscribe to the SOFIA electronic news announcements for the science community by sending an email to sofia_astronews@sofia.usra.edu with "subscribe" in the subject line. Please include your preferred e-mail address in the body of the email. The announcements are archived [here](#).

If you are an author looking for information regarding proper acknowledgements for the use of SOFIA data or appropriate citations, please see the [Information for Authors](#) page.

[Contact the SOFIA Help-Desk](#)

ANNOUNCEMENTS

(Click on link above for details of these and other announcements.)

[Cycle 4 Call for Proposals Released](#)

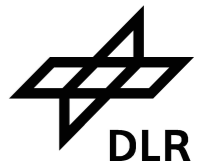
[SOFIA Observers' Workshop -- registration open](#)

[3rd Generation Science Instrument Solicitation announced](#)

- Announcements
- Cycle 4 Information
- Cycle 3 Information
- Publications
- Observing with SOFIA
- Science Instrument Suite
- Proposal Calls
- Past Proposal Calls
- SOFIA Data Products
- Documents and Presentations
- SOFIA Science Team
- SOFIA Advisory Groups
- SOFIA Talks
- DATA CYCLE SYSTEM
- SOFIA Science Archive

Page Last Updated: May 4, 2015





Checking existing and planned observations

Reserved Observations Catalogs
(appendices in the Call for Proposals document)

AOR search for Cycle 3 (current observing cycle).

Science Archive for past and current observing cycles.



FIFI-LS Reserved Observations Catalog



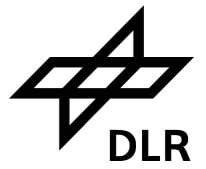
Appendix A2- FIFI-LS Reserved Observations Catalog (ROC)

Target	RA (J2000)	DEC (J2000)	Extent (arcmin)	Lines B λ in μm	Lines R λ in μm	Time (h)
Brick	17:46:08.6	-28:42:46.0	3 x 5	[OI] λ 63 OH λ 79	[OI] λ 145 [CII] λ 157	3
M17-SW	18:20:23.1	-16:11:43	2.5 x 4	[OIII] λ 52 [OIII] λ 88 [OI] λ 63	[CII] λ 157 [OI] λ 145 CO (17-16) λ 153	3
W43-main	18:47:40.0	-01:57:00.0	5 x 5	OH λ 79	CO (14-13) λ 186	1
W40 - IRS5	18:31:14.82 18:31:21	-02:03:49.8 -2:06:51	2 x 2 2 x 1	[OI] λ 63	[CII] λ 157	1
DR21(OH)	20:39:00.7	+42:22:46.7	1 x 1	[OIII] λ 52 [OIII] λ 88 OH λ 79	[OI] λ 145 [CII] λ 157	1
SgrA*	17:45:40	-29:00:28	2.5 x 2.5	OH λ 79 OH λ 119 [NII] λ 57	CO (15-14) λ 174 CO (19-18) λ 137 CO (20-19) λ 130	2
SgrA*	17:45:40	-29:00:28	10 x 10	[OI] λ 63 [OIII] λ 88 OH λ 119	[CII] λ 157 [OI] λ 145 CO (14-13) λ 186	6
Sickle	17:46:12	-28:48:30	3 x 3	[OIII] λ 52 [OIII] λ 88 [OI] λ 63	[CII] λ 157 [OI] λ 145 CO (17-16) λ 153	2
Arches	17:45:47	-28:50:40	1 x 1.5	[OIII] λ 52 [OIII] λ 88 [OI] λ 63	[CII] λ 157 [OI] λ 145 CO (17-16) λ 153	1
M83	13 37 00.9	-29 51 57	3 x 3	[OIII] λ 52 [OIII] λ 88 [OI] λ 63	[CII] λ 157 [OI] λ 145 CO(14-13) λ 186	4
IC10	00:20:17.3	+59:18:13.6	5 x 5	[NIII] λ 57	[OI] λ 145	1.5
NGC1140	02:54:33.6	10:01:39.9	2x2	[OIII] λ 52	[OI] λ 145	1.5
NGC4449	12:28:11.12	+44:05:36.8	2 x 2	[OIII] λ 52 [NIII] λ 57	[OI] λ 145	3
NGC5253	13:39:55.96	-31:38:24.4	1x1	[OIII] λ 52 [NIII] λ 57	[OI] λ 145	3
30Dor LMC	05:38:42.4	-69:06:03	4 x 4	[OIII] λ 52 [OI] λ 63	[CII] λ 157 [OI] λ 145	3
N159 E&W LMC	05:40:19 05:39:36	-69:44:52 -69:46:00	2 x 2 each	[OIII] λ 52 [OI] λ 63	[CII] λ 157 [OI] λ 145	2
N11 LMC	04:56:51.4	-66:24:44	3X3	[OIII] λ 52 [OI] λ 63	[CII] λ 157 [OI] λ 145	1.5
N44 LMC	05:22:06.9	-67:56:46	3X3	[OIII] λ 52 [OI] λ 63	[CII] λ 157 [OI] λ 145	1.5
N66 SMC	00:59:27.4	-72:10:11	3X3	[OIII] λ 52 [OI] λ 63	[CII] λ 157 [OI] λ 145	1.5





https://dcs.sofia.usra.edu



SOFIA Data Cycle System

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Email Password Sign In

Message Of The Day DCS 2.8.2

- Cycle 4 US queue has been opened.
- Cycle 3 flights started March 2015.

Welcome to the SOFIA Data Cycle System!

The SOFIA Data Cycle System (DCS) provides tools and infrastructure for both General Investigators (GIs) and Science and Mission Operations (SMO) staff for:

- proposal preparation and submission
- observation and mission planning
- data archiving and distribution

All tools and resources are available using the links below.

To start using the DCS, please [register](#) and check out the documents in the [DCS Help Resources](#) area. In addition, most of the tools have embedded help pages and links.

Be sure to check the Message of the Day for recent news and updates regarding DCS status, including planned downtime for upgrades and maintenance.

User Support	Proposal Development	Observation Planning	Data Archive & Retrieval
 About DCS Register With DCS DCS Help Resources	 Download SPT Search Proposals SOFIA Instrument Time Estimator ATRAN	 Download SSPOT Search Observing Plans Search AORs (circled in red) Visibility Tool	 Search Science Archive Search Mission Data Archive Search Missions

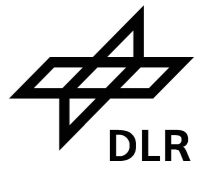
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NASA DLR USRA





AOR Search Page



SOFIA DCS: AOR Search

https://dcs.sofia.usra.edu/observationPlanning/AORSearch.jsp

Getting Started MtnView Weather Mountain View H... https://usra.web...

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Email Password Sign In

Observation Planning

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AOR Search

Get AORs for matching criteria [help]

Cycle Number: 3 - CYCLE 3

Primary Investigator: First Name Last Name New!

Instrument: Name Spectral1: ALL Spectral2/Slit: ALL Mode: ALL

Target Type: ALL

Target: CW Leo SIMBAD Position NED Position

Spatial Area: RA (hh:mm:ss) 09:47:57.41 Dec (deg:mm:ss) +13:16:43.56 Search Radius (arcsec) 60 Equinox 2000

Results Per Page: 50

... or by Plan ID* New!

Plan ID

* If Plan ID is given, other criteria will be ignored.

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AOR Search Results



AOR Search

Get AORs for matching criteria [help]

Cycle Number: 3 - CYCLE 3

Primary Investigator: First Name, Last Name *New!*

Instrument: Name, Spectral1, Spectral2/Slit, Mode

Target Type: ALL

Target: CW Leo, SIMBAD Position, NED Position

Spatial Area: RA (hh:mm:ss), Dec (deg:mm:ss), Search Radius (arcsec), Equinox

Results Per Page: 50

Plan ID

* If Plan ID is given, other criteria will be ignored.

Submit Reset

Page 1 of 1 (1 - 16 of 16)

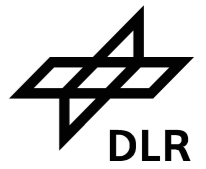
Save As CSV File [help]

AORID	Target	RA(J2000)	Dec(J2000)	NAIF_ID	Instrument	InstConfig	Spectral1	Spectral2	Slit	Freq1	Freq2	ObsMode	Exposure	Processing	LastArchived (UTC)	MissionIDs
03_0104_39	IRC+10216	09:47:57.41	+13:16:43.56		FORCAST	GRISM	FOR_G063	OPEN	FOR_LS47			C2N	00:00:20			
03_0104_40	IRC+10216	09:47:57.41	+13:16:43.56		FORCAST	GRISM	FOR_G111	OPEN	FOR_LS47			C2N	00:00:30			
03_0146_1	IRC+10216	09:47:57.41	+13:16:43.56		EXES	LOW	EXE_ELON	EXE_ECHL	EXE_S19			NOD_OFF_SLIT	00:01:20	LEVEL_1	2015-04-27	2015-03-03_EX_F197
03_0146_10	IRC+10216	09:47:57.41	+13:16:43.56		EXES	LOW	EXE_ELON	EXE_ECHL	EXE_S14			NOD_OFF_SLIT	00:01:20			
03_0146_11	IRC+10216	09:47:57.41	+13:16:43.56		EXES	LOW	EXE_ELON	EXE_ECHL	EXE_S14			NOD_OFF_SLIT	00:01:20			
03_0146_12	IRC+10216	09:47:57.41	+13:16:43.56		EXES	LOW	EXE_ELON	EXE_ECHL	EXE_S14			NOD_OFF_SLIT	00:01:20			
03_0146_13	IRC+10216	09:47:57.41	+13:16:43.56		EXES	LOW	EXE_ELON	EXE_ECHL	EXE_S14			NOD_OFF_SLIT	00:01:20			
03_0146_14	IRC+10216	09:47:57.41	+13:16:43.56		EXES	LOW	EXE_ELON	EXE_ECHL	EXE_S14			NOD_OFF_SLIT	00:01:20			
03_0146_2	IRC+10216	09:47:57.41	+13:16:43.56		EXES	LOW	EXE_ELON	EXE_ECHL	EXE_S19			NOD_OFF_SLIT	00:01:20	LEVEL_1	2015-04-27	2015-03-03_EX_F197
03_0146_3	IRC+10216	09:47:57.41	+13:16:43.56		EXES	LOW	EXE_ELON	EXE_ECHL	EXE_S19			NOD_OFF_SLIT	00:01:20	LEVEL_1	2015-04-27	2015-03-03_EX_F197
03_0146_4	IRC+10216	09:47:57.41	+13:16:43.56		EXES	LOW	EXE_ELON	EXE_ECHL	EXE_S19			NOD_OFF_SLIT	00:01:20	LEVEL_1	2015-04-27	2015-03-03_EX_F197
03_0146_5	IRC+10216	09:47:57.41	+13:16:43.56		EXES	LOW	EXE_ELON	EXE_ECHL	EXE_S19			NOD_OFF_SLIT	00:01:20	LEVEL_1	2015-04-27	2015-03-03_EX_F197
03_0146_6	IRC+10216	09:47:57.41	+13:16:43.56		EXES	LOW	EXE_ELON	EXE_ECHL	EXE_S19			NOD_OFF_SLIT	00:01:20	LEVEL_1	2015-04-27	2015-03-03_EX_F197
03_0146_7	IRC+10216	09:47:57.41	+13:16:43.56		EXES	LOW	EXE_ELON	EXE_ECHL	EXE_S19			NOD_OFF_SLIT	00:01:20	LEVEL_1	2015-04-27	2015-03-03_EX_F197
03_0146_8	IRC+10216	09:47:57.41	+13:16:43.56		EXES	LOW	EXE_ELON	EXE_ECHL	EXE_S14			NOD_OFF_SLIT	00:01:20			
03_0146_9	IRC+10216	09:47:57.41	+13:16:43.56		EXES	LOW	EXE_ELON	EXE_ECHL	EXE_S14			NOD_OFF_SLIT	00:01:20			





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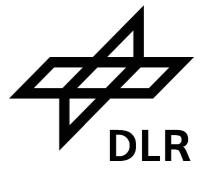
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NASA DLR USRA





Science Archive Search Page



SOFIA DCS: Science Archive Se... x

https://dcs.sofia.usra.edu/dataRetrieval/SearchScienceArchiveInfol

Getting Started MtnView Weather Mountain View H... https://usra.web...

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Data Retrieval

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Science Archive Search

Get Observations For Matching Criteria [\[help\]](#)

Instrument: **SpectEI1/SpectEI2/Slit:**

Processing State:

Target:

Spatial Search: Radius (arcsec)

 Equatorial RA(hh:mm:ss) Dec(deg:mm:ss) Equinox

 OR

 Galactic Longitude Latitude

Advanced Search

Result Per Page
 Downloadable Only
 Result Organized By Data File ObsPlan AOR

Result Setting:

Optional Fields In Data File Table

 PlanID PI AORID Obs Type Exposure Time Obs Start/End

 Product Type Observer Ingest Date Source

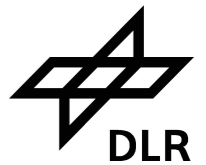
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Science Archive Search Results - I



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DCS 2.8.2

Science Archive Search

Get Observations For Matching Criteria [help]

Instrument: ALL SpectEI1/SpectEI2/Slit: ALL

Processing State: ALL

Target: IRC+10216 SIMBAD Position NED Position

Spatial Search: Radius 60 (arcsec) OR Equatorial RA(hh:mm:ss) Dec(deg:mm:ss) Equinox
 09:47:57.41 +13:16:43.5 2000

Longitude Latitude
 Galactic _____

Advanced Search

Result Per Page 500 Downloadable Only Result Organized By Data File ObsPlan AOR

Result Setting: Optional Fields In Data File Table
 PlanID PI AORID Obs Type Exposure Time Obs Start/End
 Product Type Observer Ingest Date Source

Submit Reset

Page 1 of 2 (1 - 500 of 989) Results Organized By Data File

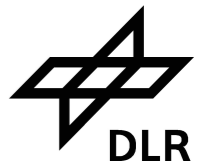
Get Selected Data In Current Page Get Downloadable Data In All Pages There is a 30GB download limit.

ObservationID	MissionID	PlanID	PI	Instrument	AORID	SpectEI1	SpectEI2	Slit	Target	ObsType	Processing	RAJ2000 Longitude (Galactic) (Ecliptic)	DecJ2000 Latitude (Galactic) (Ecliptic)	Exposure (Sec)	ObsStart (UTC)	ObsEnd (UTC)	Release (UTC)
2015-03-27_FL_F206R00180	2015-03-27_FL_F206			FIFI-LS	NONE	NONE	FIF_RED		IRC10216	OBJECT	LEVEL_1	09:47:54.49 221.425(G) 144.686(E)	+13:17:25.8 45.055(G) -0.003(E)	7.68	2015-03-27 06:46:16.0	2015-03-27 06:46:31.0	2016-04-28 21:55:39.0
2015-03-27_FL_F206R00181	2015-03-27_FL_F206			FIFI-LS	NONE	NONE	FIF_RED		IRC10216	OBJECT	LEVEL_1	09:47:54.49 221.425(G) 144.686(E)	+13:17:25.8 45.055(G) -0.003(E)	7.68	2015-03-27 06:42:29.0	2015-03-27 06:42:44.0	2016-04-28 21:55:25.0
2015-03-27_FL_F206R00169	2015-03-27_FL_F206			FIFI-LS	NONE	NONE	FIF_RED		IRC10216	OBJECT	LEVEL_1	09:47:54.49 221.425(G) 144.686(E)	+13:17:25.8 45.055(G) -0.003(E)	7.68	2015-03-27 06:41:41.0	2015-03-27 06:41:56.0	2016-04-28 21:58:36.0





Science Archive Search Results - 2

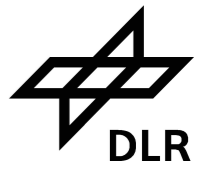


Product ID	Observation ID	Instrument	Filter	Mode	Target	RA	Dec	Altitude	Object	Level	RA	Dec	Altitude	Start Time	End Time	Download Time	
2015-03-12_FI_F199R00034	2015-03-12_FI_F199	FIFI-LS	Get Data Products	NONE	FIF_RED			IRC10216	OBJECT	LEVEL_1	221.459(G) 144.698(E)	45.048(G) -0.025(E)	5.12	2015-03-12 03:14:19.0	2015-03-12 03:14:27.0	2016-04-14 00:17:14.0	
2015-03-12_FI_F199B00034	2015-03-12_FI_F199	FIFI-LS	90_0030_10 Get Data Products	FIF_BLUE	NONE			IRC10216	OBJECT	LEVEL_1	09:47:55.43 221.459(G) 144.698(E)	+13:15:56.16 45.048(G) -0.025(E)	5.12	2015-03-12 03:14:19.0	2015-03-12 03:14:27.0	2016-04-14 00:17:08.0	
2015-03-12_FI_F199B00029	2015-03-12_FI_F199	FIFI-LS	90_0030_10 Get Data Products	FIF_BLUE	NONE			IRC10216	OBJECT	LEVEL_1	09:47:54.89 221.457(G) 144.698(E)	+13:15:56.52 45.046(G) -0.026(E)	5.12	2015-03-12 03:13:58.0	2015-03-12 03:14:06.0	2016-04-14 00:18:14.0	
2015-03-12_FI_F199R00029	2015-03-12_FI_F199	FIFI-LS	90_0030_10 Get Data Products	NONE	FIF_RED			IRC10216	OBJECT	LEVEL_1	09:47:54.89 221.457(G) 144.698(E)	+13:15:56.52 45.046(G) -0.026(E)	5.12	2015-03-12 03:13:58.0	2015-03-12 03:14:06.0	2016-04-14 00:18:20.0	
2015-03-12_FI_F199B00026	2015-03-12_FI_F199	FIFI-LS	90_0030_10 Get Data Products	FIF_BLUE	NONE			IRC10216	OBJECT	LEVEL_1	09:47:54.89 221.457(G) 144.698(E)	+13:15:56.52 45.046(G) -0.026(E)	5.12	2015-03-12 03:09:10.0	2015-03-12 03:09:18.0	2016-04-14 00:18:47.0	
2015-03-03_EX_F19780052	2015-03-03_EX_F197	03_0146	Fonfria, Jose	EXES	03_0146_7 Get Data Products	EXE_ELON	EXE_ECHL	EXE_S19	IRC +10216	OBJECT	LEVEL_1	09:47:57.41 221.447(G) 144.701(E)	+13:16:43.56 45.06(G) -0.01(E)	128.0	2015-03-03 13:13:18.828	2015-03-03 13:17:06.39	2016-04-27 17:40:11.0
<input type="checkbox"/> 2015-03-03_EX_F19780049	2015-03-03_EX_F197	03_0146	Fonfria, Jose	EXES	03_0146_7 Get Data Products	EXE_ELON	EXE_ECHL	EXE_S19	IRC +10216	FLAT	LEVEL_1	09:47:58.76 221.451(G) 144.707(E)	+13:16:40.07 45.065(G) -0.009(E)	52.0	2015-03-03 13:03:05.687	2015-03-03 13:04:05.406	2015-04-27 17:42:39.0
<input type="checkbox"/> 2015-03-03_EX_F19780044	2015-03-03_EX_F197	03_0146	Fonfria, Jose	EXES	03_0146_18 Get Data Products	EXE_ELON	EXE_ECHL	EXE_S19	IRC +10216	FLAT	LEVEL_1	09:47:58.72 221.452(G) 144.707(E)	+13:16:37.84 45.065(G) -0.01(E)	60.0	2015-03-03 12:43:28.562	2015-03-03 12:44:35.875	2015-04-27 17:42:55.0
<input type="checkbox"/> 2015-03-03_EX_F19780043	2015-03-03_EX_F197	03_0146	Fonfria, Jose	EXES	03_0146_18 Get Data Products	EXE_ELON	EXE_ECHL	EXE_S19	IRC +10216	FLAT	LEVEL_1	09:47:58.72 221.452(G) 144.707(E)	+13:16:37.84 45.065(G) -0.01(E)	60.0	2015-03-03 12:41:50.718	2015-03-03 12:42:58.343	2015-04-27 17:43:00.0
<input type="checkbox"/> 2015-03-03_EX_F19780041	2015-03-03_EX_F197	03_0146	Fonfria, Jose	EXES	03_0146_18 Get Data Products	EXE_ELON	EXE_ECHL	EXE_S19	IRC +10216	SKY	LEVEL_1	09:47:57.41 221.447(G) 144.701(E)	+13:16:43.56 45.06(G) -0.01(E)	16.0	2015-03-03 12:39:36.875	2015-03-03 12:39:54.656	2015-04-27 17:41:11.0
<input type="checkbox"/> 2015-03-03_EX_F19780038	2015-03-03_EX_F197	03_0146	Fonfria, Jose	EXES	03_0146_6 Get Data Products	EXE_ELON	EXE_ECHL	EXE_S19	IRC +10216	FLAT	LEVEL_1	09:47:58.72 221.452(G) 144.707(E)	+13:16:37.39 45.065(G) -0.01(E)	84.0	2015-03-03 12:27:48.734	2015-03-03 12:29:22.218	2015-04-27 17:43:11.0
<input type="checkbox"/> 2015-03-03_EX_F19780033	2015-03-03_EX_F197	03_0146	Fonfria, Jose	EXES	03_0146_4 Get Data Products	EXE_ELON	EXE_ECHL	EXE_S19	IRC +10216	FLAT	LEVEL_1	09:47:58.67 221.453(G) 144.707(E)	+13:16:35.53 45.064(G) -0.011(E)	104.0	2015-03-03 12:04:15.796	2015-03-03 12:06:09.703	2015-04-27 17:43:27.0
<input type="checkbox"/> 2015-03-03_EX_F19780032	2015-03-03_EX_F197	03_0146	Fonfria, Jose	EXES	03_0146_4 Get Data Products	EXE_ELON	EXE_ECHL	EXE_S19	IRC +10216	FLAT	LEVEL_1	09:47:58.67 221.453(G) 144.707(E)	+13:16:35.53 45.064(G) -0.011(E)	104.0	2015-03-03 12:02:02.687	2015-03-03 12:03:56.328	2015-04-27 17:43:32.0
2015-03-03_EX_F19780031	2015-03-03_EX_F197	03_0146	Fonfria, Jose	EXES	03_0146_3 Get Data Products	EXE_ELON	EXE_ECHL	EXE_S19	IRC +10216	OBJECT	LEVEL_1	09:47:57.41 221.447(G) 144.701(E)	+13:16:43.56 45.06(G) -0.01(E)	128.0	2015-03-03 11:55:09.203	2015-03-03 12:00:12.0	2016-04-27 17:41:36.0
2015-03-03_EX_F19780025	2015-03-03_EX_F197	03_0146	Fonfria, Jose	EXES	03_0146_1 Get Data Products	EXE_ELON	EXE_ECHL	EXE_S19	IRC +10216	OBJECT	LEVEL_1	09:47:57.46 221.448(G) 144.701(E)	+13:16:44.78 45.061(G) -0.01(E)	5.0	2015-03-03 11:25:11.484	2015-03-03 11:25:33.828	2016-04-27 17:41:52.0
2015-03-03_EX_F19780023	2015-03-03_EX_F197	03_0146	Fonfria, Jose	EXES	03_0146_1 Get Data Products	EXE_ELON	EXE_ECHL	EXE_S19	IRC +10216	OBJECT	LEVEL_1	09:47:57.63 221.448(G) 144.702(E)	+13:16:41.75 45.061(G) -0.01(E)	5.0	2015-03-03 11:22:04.484	2015-03-03 11:22:26.703	2016-04-27 17:42:02.0
2015-03-03_EX_F19780018	2015-03-03_EX_F197	03_0146	Fonfria, Jose	EXES	03_0146_1 Get Data Products	EXE_ELON	EXE_ECHL	EXE_S19	IRC +10216	OBJECT	LEVEL_1	09:47:57.41 221.447(G) 144.701(E)	+13:16:43.56 45.06(G) -0.01(E)	5.0	2015-03-03 11:11:57.406	2015-03-03 11:12:19.546	2016-04-27 17:42:29.0
2015-01-15_GR_F185_GREAT_SAFFTS0_011389_011	2015-01-15_GR_F185	201501_GR_02		GREAT	UNKNOWN	GRE_L2	NONE		IRC+10216P0	OBJECT	LEVEL_1	09:47:57.41 221.425(G) 144.695(E)	+13:17:43.44 45.068(G) 0.005(E)	18.8	2015-01-15 08:30:01.0	2015-01-15 08:30:42.0	2016-01-29 18:04:28.0
2015-01-15_GR_F185_GREAT_SXFFTS0_011389_011	2015-01-15_GR_F185	201501_GR_02		GREAT	UNKNOWN	GRE_L2	NONE		IRC+10216P0	OBJECT	LEVEL_1	09:47:57.41 221.425(G) 144.695(E)	+13:17:43.44 45.068(G) 0.005(E)	18.8	2015-01-15 08:30:01.0	2015-01-15 08:30:42.0	2016-01-29 18:04:29.0
2015-01-15_GR_F185_GREAT_SXFFTS0_011389_007	2015-01-15_GR_F185	201501_GR_02		GREAT	UNKNOWN	GRE_L2	NONE		IRC+10216P0	OBJECT	LEVEL_1	09:47:57.41 221.425(G) 144.695(E)	+13:17:43.44 45.068(G) 0.005(E)	18.8	2015-01-15 08:28:11.0	2015-01-15 08:28:52.0	2016-01-29 18:04:30.0
2015-01-15_GR_F185_GREAT_SAFFTS0_011389_007	2015-01-15_GR_F185	201501_GR_02		GREAT	UNKNOWN	GRE_L2	NONE		IRC+10216P0	OBJECT	LEVEL_1	09:47:57.41 221.425(G) 144.695(E)	+13:17:43.44 45.068(G) 0.005(E)	18.8	2015-01-15 08:28:10.0	2015-01-15 08:28:50.0	2016-01-29 18:04:30.0





https://dcs.sofia.usra.edu



SOFIA Data Cycle System

RETRIEVE ARCHIVE
OBSERVE
PROPOSE PLAN

Email Password Sign In

Message Of The Day DCS 2.8.2

- Cycle 4 US queue has been opened.
- Cycle 3 flights started March 2015.

Welcome to the SOFIA Data Cycle System!

The SOFIA Data Cycle System (DCS) provides tools and infrastructure for both General Investigators (GIs) and Science and Mission Operations (SMO) staff for:

- proposal preparation and submission
- observation and mission planning
- data archiving and distribution

All tools and resources are available using the links below.

To start using the DCS, please [register](#) and check out the documents in the [DCS Help Resources](#) area. In addition, most of the tools have embedded help pages and links.

Be sure to check the Message of the Day for recent news and updates regarding DCS status, including planned downtime for upgrades and maintenance.

User Support	Proposal Development	Observation Planning	Data Archive & Retrieval
 About DCS Register With DCS DCS Help Resources	 Download SPT Search Proposals SOFIA Instrument Time Estimator (circled in red) ATRAN	 Download SSPOT Search Observing Plans Search AORs Visibility Tool	 Search Science Archive Search Mission Data Archive Search Missions

[DCS Help Resources](#) • [DCS Site Map](#) • [About DCS](#)
[SOFIA Science Page](#) • [SOFIA Public Site](#)

NASA DLR USRA





Exposure time estimation: SITE



SOFIA DCS: SOFIA Instrument ...

https://dcs.sofia.usra.edu/proposalDevelopment/SITE/index.jsp

Getting Started MtnView Weather Mountain View H... https://usra.web...

ravi.sankrit@gmail.com Profile Logout
DCS Group: General Investigator
Message Of The Day
• Cycle 4 US queue has been opened.
• Cycle 3 flights started March 2015.

Proposal Development
DCS 2.8.2

SOFIA Instrument Time Estimator (SITE)

In the four sections of this form, select the instrument, astronomical source, telescope, observing condition constraints and calculation method. Click on the **Calculate** button to submit the parameters from all the sections to the server. The results are reported in a separate web page that can be resized and printed. Links to related tools are here:

FIFI-LS Time Estimator FORCAST GRISM Time Estimator FLITECAM GRISM Time Estimator GREAT Time Estimator EXES Time Estimator ATRAN

Please Check 'Notes and Known Issues' Before Proceeding

Instrument: FORCAST **Calculate**

Instrument properties: [more info](#)

Filter: FOR_F086 FOR_F242 [more info](#)

Calculation Method
Calculation method: [more info](#)
Select the calculation method

S/N ratio resulting from a Total Integration Time of 900 secs
 Total Integration Time to achieve a S/N ratio of 4

Astronomical Source Definition
Spatial profile and continuum brightness: [more info](#) Choose point or extended source.

Point source (nominal spatial profile) with spatially integrated brightness 56.E-3 Jy
Spatially integrated brightness for the long wavelength filter 103.E-3 Jy

Extended source having uniform surface brightness 12.561E-3 Jy / sq arcsec
Surface brightness for the long wavelength filter 19.474E-3 Jy/sq arcsec

Emission line: [more info](#) in addition to the above continuum. The output SNR or observing time will be for the sum of continuum plus line.
Single emission line at wavelength 8.606 microns with line flux 0.0 W/m²
Emission line at longer wavelength 24.240 microns with line flux 0.0 W/m²

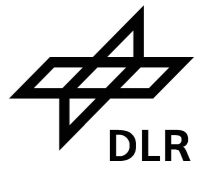
Observing Condition Constraints
Note: You can read the [explanatory notes](#) for more information on the water vapor overburden.

Zenith Water Vapor Overburden in microns: 2 5 7 10 13 20 27 34 40
Elevation Angle: 20° 40° 60°





FORCAST Grism Time Estimation - I



Submit Form Clear Form

Input Observing Parameters

Select the quantity to be estimated: Limiting Flux

Choose a grism: FOR_G063

Choose a slit size (arcsec): 2.4

Required Signal-to-Noise ratio: 10.0

Total on-source integration time (sec): 900.0

Source type: Point Source

Source Flux: 1 Jy at 10 microns

Source spectral shape: Blackbody

Source blackbody temperature (K) or Power Law Index: 25000

Submit Form Clear Form



FORCAST Grism Time Estimation - 2



Submit Form Clear Form

FORCAST Grism Calculator Output

Input Parameters

Mode: Limiting Flux
 Grism: 1
 Slit: 2.4 arcsec
 Requested Signal-to-Noise Ratio: 10.0
 Total exposure time: 900.0 sec

[View output data file](#)

Slit size = 2.400 arcsec
 Resolution = 180.0
 Single frame exposure time = 0.111734 sec
 Frame Rate = 8.950 Hz
 Number of Coads = 8055.00000
 Total Exposure Time = 900.000000 sec

Wavelength (microns)	FWHM (arcsec)	Fractional Slit Transmission
5.000	3.51	0.49
6.350	3.53	0.49
7.700	3.54	0.48

Wavelength (microns)	Limiting Fluxes (mJy)	Fluxes (W/m ² /micron)
5.000	343.340	0.4117E-13
6.350	518.522	0.3855E-13
7.700	1036.276	0.5240E-13

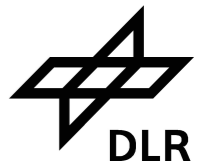
Plot of Limiting Flux as a function of Wavelength for S/N = 10.0

[View output data file](#)





GREAT Time Estimation - I



Web-based input form for GREAT time estimator

This form can be used to estimate the integration time needed to reach a requested signal-to-noise for a given brightness temperature.

GREAT receives signal in two frequency bands, USB and LSB. The transmission plot shows the two possible tunings, putting the line in the USB or in the LSB. Noise comes from both USB and LSB. Integration times are calculated for both tunings.

This form and the program to estimate the desired quantities was written by Riccardo Melchiorri based on a previous PHP code version.

Submit Form

Input Parameters

Observatory Altitude (in feet; < 60000 ft):	<input type="text" value="41000"/>	<input checked="" type="radio"/> ft <input type="radio"/> m
Water Vapor Overburden (in microns; 0 if unknown):	<input type="text" value="0"/>	
Telescope elevation (between 20 and 60 deg):	<input type="text" value="45"/>	
Signal to Noise Ratio / Integration Time (s) :	<input type="text" value="5"/>	<input checked="" type="radio"/> SNR <input type="radio"/> Total Int.Time
Rest Frequency (in THz, use 7 decimals):	<input type="text" value="1.9005369"/>	
Velocity correction(Observer VLSR + source VLSR) in km/s:	<input type="text" value="0"/>	
Brightness Temperature, TR*(K) :	<input type="text" value="5"/>	
Frequency or Velocity Resolution :	<input type="text" value="1"/>	<input type="radio"/> MHz <input checked="" type="radio"/> km/s
Comments for the plot :	<input type="text" value="Example"/>	

Submit Form

The time estimator calculates the time required to reach an rms brightness temperature , ΔTR^* , ($TR^* = TA^* / \eta_{fss}$, where η_{fss} is the forward scattering efficiency, = 0.95 for GREAT at all bands) for a line at a frequency ν by solving the standard radiometric formula

$$\Delta TA^* = (2 T_{sys}) / \text{sqrt}(t \Delta \nu)$$

Here ΔTA^* is the antenna temperature corrected for ohmic losses and rear spillover. T_{sys} is the single sideband system temperature outside the earth atmosphere, t is the integration time (ON+OFF) and $\Delta \nu$ is the desired frequency resolution. For further details, see [Guide to GREAT v3](#).



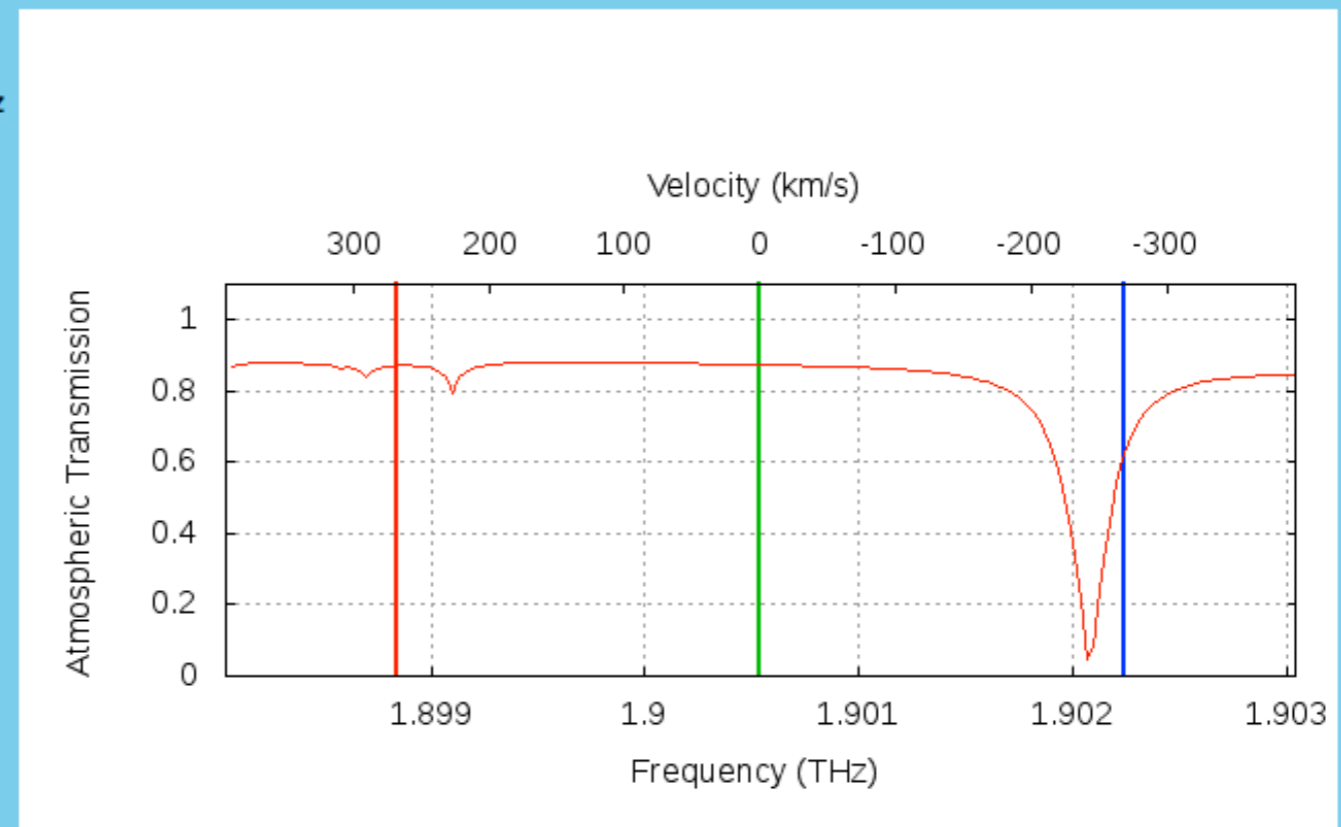
Output

Rest Frequency	1.900537 THz
Single Sideband System Temperature (LSB tuning)	3429 K
Single Sideband System Temperature (USB tuning)	2844 K
Integration Time (LSB)	8.2 s
Integration Time (USB)	5.7 s
Atmospheric Transmission (RestFreq)	0.87 -
Atmospheric Transmission (USB)	0.63 -
Atmospheric Transmission (LSB)	0.86 -

Assumed Parameters

Ambient temperature for the atmosphere	220 K
Physical Temperature of the Telescope	230 K
Telescope Efficiency incl. ohmic losses and spillover	0.92
Double Side Band Receiver Temperature	1100 K
Forward Scattering Efficiency	0.95

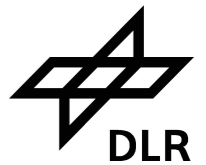
Plot of Atmospheric Transmission



[View output data file](#) [View SM input script](#)



Atmospheric Transmission - ATRAN



Submit Form Clear Form

Input Parameters

Give the **Observatory Altitude** (in feet; < 60000 ft):

Choose the closest value of the **Observatory Latitude**:

Give the desired **Water Vapor Overburden** (in microns; 0 if unknown):

Choose the **Number of Atmospheric Layers** (usually 2):

Give the **Zenith Angle** of Observations (between 0 and 90 deg):

Give the desired **Wavelength Range** (min and max in microns; min > 0.85): -

Give the **Resolution R** for Smoothing (0 = No Smoothing):

Comments for the plot :

Submit Form Clear Form

Input Parameters

Give the **Observatory Altitude** (in feet; < 60000 ft):

Choose the closest value of the **Observatory Latitude**:

Give the desired **Water Vapor Overburden** (in microns; 0 if unknown):

Choose the **Number of Atmospheric Layers** (usually 2):

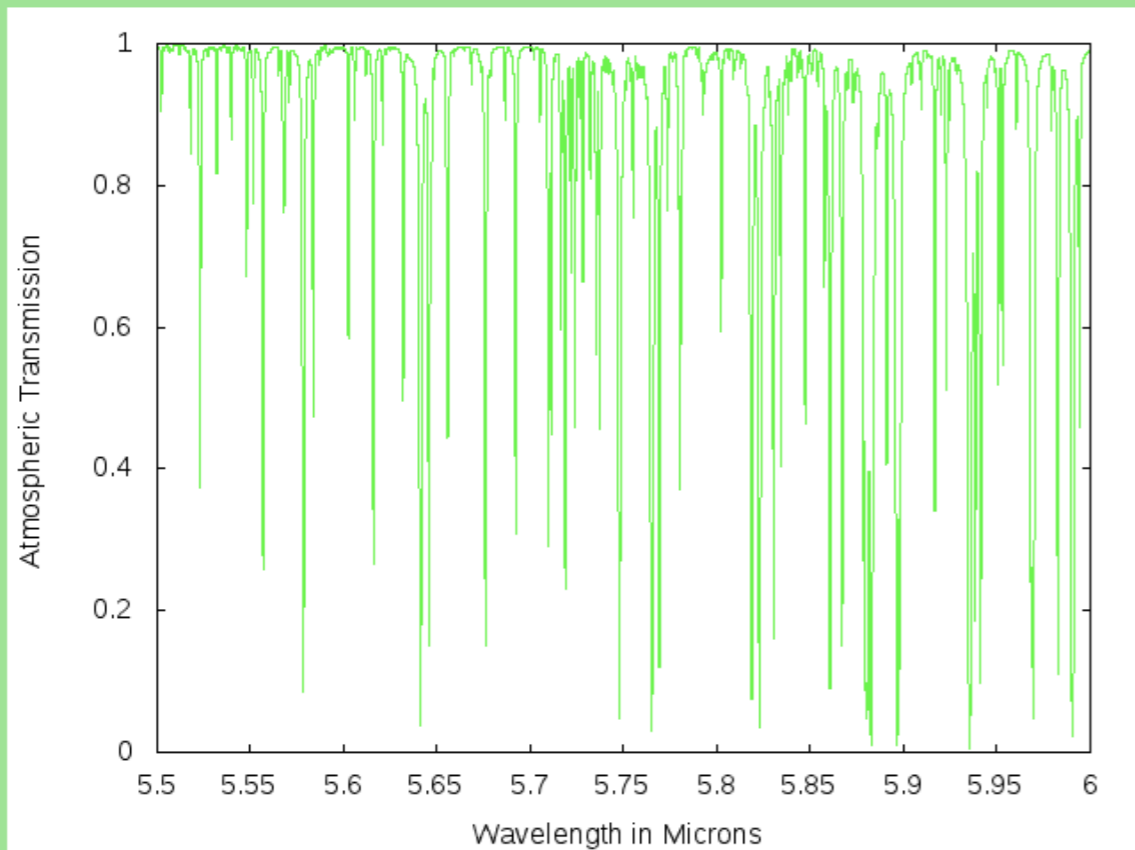
Give the **Zenith Angle** of Observations (between 0 and 90 deg):

Give the desired **Wavelength Range** (min and max in microns; min > 0.85): -

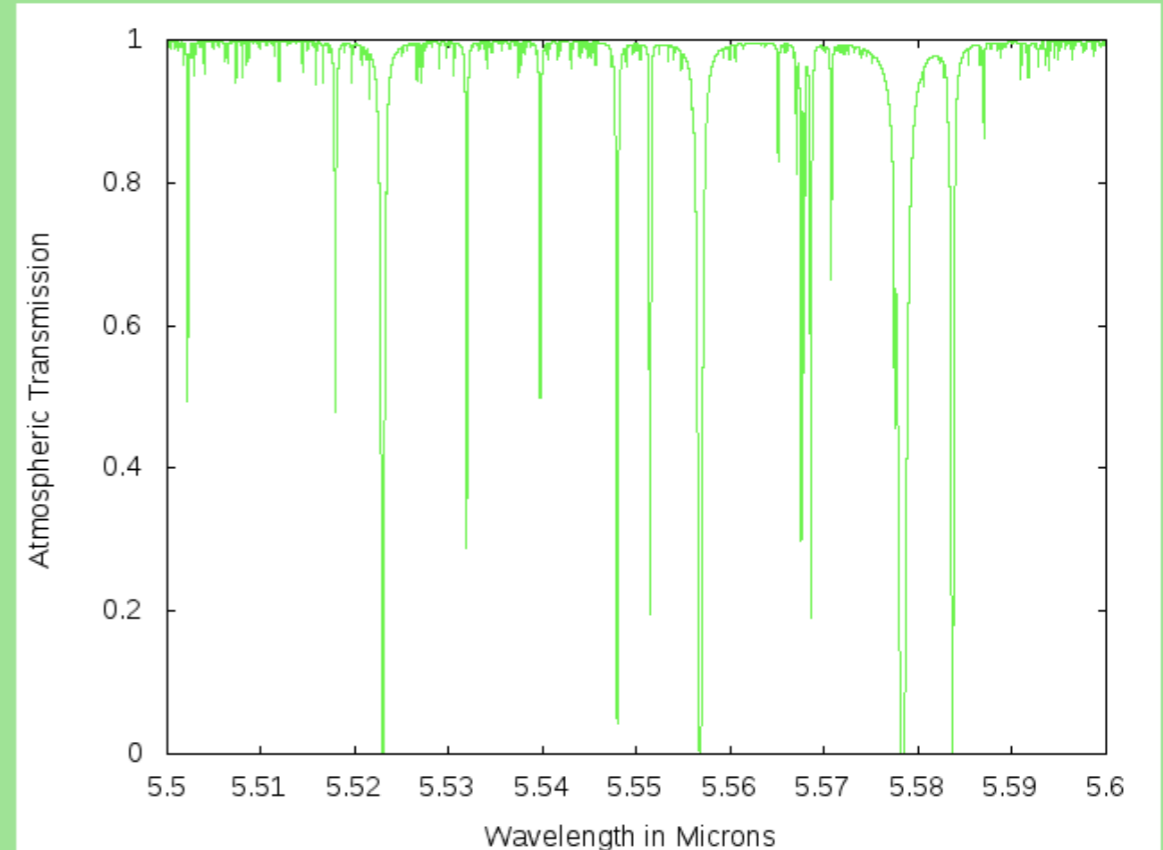
Give the **Resolution R** for Smoothing (0 = No Smoothing):

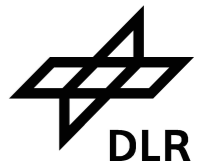
Comments for the plot :

Plot of Atmospheric Transmission



Plot of Atmospheric Transmission





Proposal preparation and submission

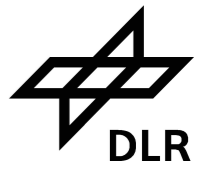
Phase I proposals must be prepared and submitted using the SOFIA Proposal Tool (SPT).

SPT is based on the Astronomer's Proposal Tool (APT) developed and used for Hubble Space Telescope proposals.

The most recent version, SPT v2.8.1, has to be used for Cycle 4 proposals.



SOFIA Proposal Tool (SPT)



SOFIA's Proposal Tool - Unsubmitted Phase I Proposal (Unsaved)

Form Editor | Spreadsheet Editor | PDF Preview | Errors and Warnings | Submit

New Proposal | New Co-I

Unsubmitted Phase I Prop
Proposal Information
Instruments

Proposal Information of Unsubmitted Phase I Proposal (Unsaved)

Proposal ID:

Title:

Abstract:

Related Proposals:

Status of SOFIA Observations in Last Two Years:

TAC Queue:

Edit Previous | New | Edit Unnamed PI

Proposa...	Proposal ID	Title	Abstract	Related Pr...	Status of S...	TAC Queue	Queue Ob...	Target of...	Impact Pro...	Survey Pro...	Scientific...	Science Ke...

Show: Proposal Information

17 errors & warnings (Click for Details)

SOFIA's Proposal Tool - Unsubmitted Phase I Proposal (Unsaved)

Form Editor | Spreadsheet Editor | PDF Preview | Errors and Warnings | Submit

New Proposal | New Co-I

Unsubmitted Phase I Prop
Proposal Information
Instruments

Proposal Information of Unsubmitted Phase I Proposal (Unsaved)

Status of SOFIA Observations in Last Two Years:

TAC Queue:

Queue Observation:

Target of Opportunity:

Impact Program:

Survey Program:

Scientific Category:

Science Keyword 1:

Science Keyword 2:

Science Keyword 3:

Science Keyword 4:

Science Keyword 5:

EPO Program Participation: Interested in participating in the EPO program

Proposal PDF Attachment:

Edit Previous | New | Edit Unnamed PI

Proposa...	Proposal ID	Title	Abstract	Related Pr...	Status of S...	TAC Queue	Queue Ob...	Target of...	Impact Pro...	Survey Pro...	Scientific...	Science Ke...

Show: Proposal Information

17 errors & warnings (Click for Details)





SPT Example - FORCAST

Worksheet Editor PDF Preview Errors and Warnings Submit

New Observation

Observation 1: CW Leo of Unsubmitted Phase I Proposal (Unsaved)

Instrument: FORCAST

Target Name: CW Leo

Source Type: Sidereal SIMBAD NED

NAIF ID: NAIF ID Selection List

Coordinates: Galactic RA/GalLong: 9 47 57.41 DEC/GalLat: 13 16 43.56

Proper Motion ("/yr): RA: 0 DEC: 0

Instrument	Configuration	Spectral Element 1	Spectral Element 2	Slit
GRISM	None Selected	FOR_G329	FOR_LS24	

Instrument Mode: C2N 3_point Overheads - Constant (secs): 30.0 + Factor: 2.2012029

Integration Time (secs): 60 Alternate Overhead: 0 Default Overhead: 162.07217 Duration: 222.07217

Map Area: arcmin X arcmin

Order of Observation:

Priority: Low

Time Critical Observation:

First Critical Time, From: To:

Second Critical Time, From: To:

Edit Observations ← New ▾ → Edit Next



SPT Example - EXES



al

Instrument: EXES

Target Name: IRC+10216

Source Type: Sidereal SIMBAD NED

NAIF ID:

Coordinates: Galactic RA/GalLong: 9 47 57.41 DEC/GalLat: 13 16 43.56

Proper Motion ("/yr): RA: 0 DEC: 0

Instrument	Configuration	Spectral Element 1	Spectral Element 2	Slit	Wavelength (microns)
LOW	None Selected	EXE_ECHL	EXE_S19		12.345

Instrument Mode: NOD_ON_SLIT Overheads - Constant (secs): 900.0 + Factor: 0.0

Integration Time (seconds): 60 Alternate Overhead: 0 Default Overhead: 900.0 Duration: 960.0

Map Area: arcmin x arcmin

Order of Observation:

Priority: Low

Time Critical Observation:

First Critical Time, From: To:

Second Critical Time, From: To:

Text

Observa... | Instrument | Target Name | Source Type | SIMBAD | NED | NAIF ID field | Galactic | Lambda | Beta | Proper Mo... | Instrument | Instrumen... | Integratio... | Map Area | Order of O... | Priorit

Show: Observation

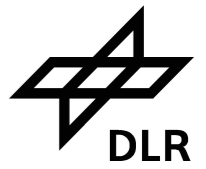
Alternate Overhead: 0 Default O

arcmin Integration Time (seconds): Clock time as generated by the online ETC.

Error: Integration Time (seconds) is a required field



SSpot (SOFIA Spot)



sspot File Edit Targets Observation Tools Images Overlays Options Window View Help

SOFIA Planning Tool (SSpot)

Observations

Astronomical Observation Requests (AORs)

Label	Target	Pos...	Instr...	Dur...	Stat	On	Mode	Exp...	Filter 1	Filter 2	Slit	Chop...	Chop...	NodT...	NodA...	aorID	Dither...	order
-------	--------	--------	----------	--------	------	----	------	--------	----------	----------	------	---------	---------	---------	---------	-------	-----------	-------

Observations

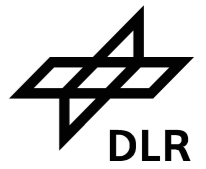
Target: None Specified Estimated: 0 min Awarded: 0 min

Proposal - <No File> Net Up





FORCAST Grism AOR



FORCAST_Grism [AOR ID: _1]

Unique AOR Label:

Target: W51 Type: Fixed Single
290.925000, 14.509200 Equ J2000 or 19h23m42.0000s, +14d30m33.120s Equ J2000

Observing Condition **Acquisition/Tracking**

Exposure Time (sec) Instrument Configuration Slit

Cycles SW LW

Min Contiguous Exp Time (sec)

Observation Order

IR Source Type

Dither Pattern

- None
- 3 point
- 5 point
- 9 point
- custom

Dither Offset

Dither Coordinate

Dither Offset (arcsec)

ExpTimePerDither (sec)

Scan Size (arcsec)

Number	Offset Along Slit(*)	Offset Perp Slit(*)
--------	----------------------	---------------------

Chop / Nod

Example Rotation Angle (deg)

Chop/Nod Style

Chop Type

Chop Throw (arcsec)

Chop Angle Coordinate

Chop Angle (deg)

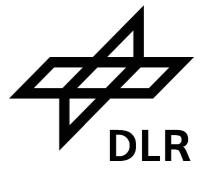
Nod Throw (arcsec)

Nod Angle Coordinate

Nod Angle (deg)



FORCAST Grism Overlay



The screenshot displays the SOFIA Planning Tool (SSpot) interface. The main window shows a star field image with a FORCAST Grism Overlay. The overlay consists of three vertical lines: a purple line on the left, a green line in the center, and a red line on the right. A small black crosshair is visible on the star field. The interface includes a toolbar at the top with various icons, a status bar at the bottom, and a control panel on the right side. The control panel shows the FORCAST_Grism-0000 overlay is active, along with a Base Image overlay. The status bar indicates the target is W51, Type: Fixed Single, Estimated: 47 min, and Awarded: 0 min. The bottom bar shows the proposal name as <No File>, a Net Up button, and Total AORs: 1 / Active: 1.

SOFIA Planning Tool (SSpot)

1 Pixel: 1.37500"

Mouse Control: ⌘-Left Mouse Button: Drag to adjust bias (horizontally) and contrast (vertically); double-click to reset.
Shift-Left Mouse Button: Shift the center of image.

Mouse: [Slider]

W51 3a

FORCAST_Grism-0000

Base Image

Observations W51 3a

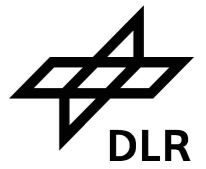
Target: W51 Type: Fixed Single Estimated: 47 min Awarded: 0 min

Proposal - <No File> Net Up Total AORs: 1 / Active: 1





FIFI-LS AOR - I



FIFI-LS [AOR ID: _2]

Unique AOR Label: FIFI_LS-0000

Target: W51 Type: Fixed Single
290.925000, 14.509200 Equ J2000 or 19h23m42.0000s, +14d30m33.120s Equ J2000

New Target Modify Target -... Target List...

Observing Condition Acquisition/Tracking

Config Mode Map

Wavelength Blue (micron) 63.184
Width Blue (micron) 0.000
Wavelength Red (micron) 157.741
Width Red (micron) 0.000
Dichroic 105_micron
Primary Array Blue

Spectral 1
 FIF_BLUE

Spectral 2
 FIF_RED

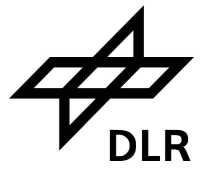
Observation Est... Comments... Proposal Info...

? Cancel Apply OK





FIFI-LS AOR - 2



FIFI-LS [AOR ID: _2]

Unique AOR Label:

Target: W51 Type: Fixed Single
290.925000, 14.509200 Equ J2000 or 19h23m42.0000s, +14d30m33.120s Equ J2000

Instrument Mode

Chop Throw (arcsec)

Chop Angle Coordinate

Chop Angle (deg)

Reference Position

Ref Type

By Offset

By Position

Map Ref. Pos.

Reference Name

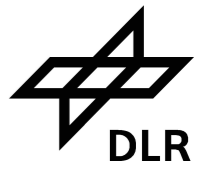
RA Offset (arcsec)

Dec Offset (arcsec)





FIFI-LS AOR - 3



FIFI-LS [AOR ID: _2]

Unique AOR Label:

Target: W51 Type: Fixed Single
290.925000, 14.509200 Equ J2000 or 19h23m42.0000s, +14d30m33.120s Equ J2000

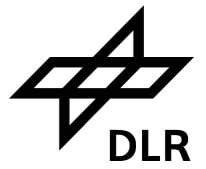
On source exp. time per cycle (sec)
On-source exp. time (sec)
Cycles
Min Contiguous Exp Time (sec)
FOV Angle (deg)
Map Type
Step Size Along Lat (arcsec)
Step Size Along Lon (arcsec)
Number of Points Along Lat
Number of Points Along Lon
Map Offset RA (arcsec)
Map Offset Dec (arcsec)

Number	Offset East/Row/Perpendicul...	Offset North/Column/Parrell (*)
1	-25.0	-40.0
2	5.0	40.0





FIFI-LS Overlay



SOFIA Planning Tool (SSpot)

Mouse Control
⌘-Left Mouse Button: Drag to adjust bias (horizontally) and contrast (vertically); double-click to reset.
Shift-Left Mouse Button: Shift the center of image.

W51 3a

FIFI_LS-0000

Base Image

Observations W51 3a

Target: W51 Type: Fixed Single Estimated: 11 min Awarded: 0 min

Proposal - <No File> Net Up Total AORs: 1 / Active: 1





Recap

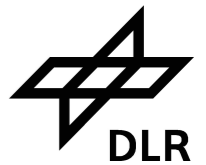
Generating the science idea(s).

Checking existing and planned observations.

Exposure time estimation and feasibility analysis.

Proposal preparation and submission.

Using SSpot, the Phase II tool.



Coda

<http://www.sofia.usra.edu/Science/proposals/cycle4/phaseI.html>

SOFIA Cycle 4 Call for Proposals Document

Observer's Handbook for Cycle 4

Email the SOFIA help desk - sofia_help@sofia.usra.edu

