

User Tools for Cycle 1

Phase I: Proposal Preparation and Submission

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DCS Development Lead

DCS Development Team:

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Phase I: Proposal Preparation and Submission

- During Phase I, GI prepares proposal and submits electronically to SSMOC for review using the **SOFIA Proposal Tool (SPT)**
- Proposal Contents:
 - Cover Info: Investigators, abstract, timing constraints, TAC Queue (US/DE)
 - List of Proposed Observations: Position, instrument/config, filters/gratings, integration time, total duration, etc...
 - Scientific/Technical Justification: attached PDF file
- GI will receive a confirmation email when proposal is uploaded to SSMOC
- Proposals can be *re*-submitted any number of times before the deadline, but no previous versions are saved at the SSC.

Phase I Tools

SOFIA Instruments Time Estimator (SITE): web-based tool that provides sensitivity estimates (S/N, integration times for given source flux).

- <https://dcs.sofia.usra.edu/proposalDevelopment/SITE/index.jsp>
- Fiducial on-source sensitivities for each filter scaled by filter and atmospheric transmission for given water vapor.
- *FORCAST & FLITECAM Imaging only*

SOFIA Proposal Tool (SPT): stand-alone JAVA application for preparing and submitting all proposal materials.

- based on APT, developed at STScI for HST.
- <https://dcs.sofia.usra.edu/proposalDevelopment/installSPT/index.jsp>

Visibility Tool (VT): web-based tool that plots visibility/heading plots given source position, aircraft location, and date/time.

- Informational only – output from VT not required as part of proposal submission. But useful in determining schedule constraints.
- <https://dcs.sofia.usra.edu/observationPlanning/visibilityTool.jsp>

New for Cycle 1

- DCS now supports separate TAC queues for US and German time allocations, including separate deadlines.
 - Same version of SPT used in *both* cases.
- SPT now displays default overheads for each instrument and observing mode; with user override if desired.
- NAIF-ID support for solar system objects
- Improved error reporting and messages.

New version of SPT for Cycle 1 available with Call for Proposals.



Data Cycle System Planning Database

- All proposals submitted to the SSMOC are parsed and stored in the DCS Observation Planning database.
- Planning database can be accessed (by SMO staff) via web pages which provide:
 - Access controls
 - Duplicate checking (between planning DB and archive)
 - Review tracking (e.g. time awarded, TAC grade, notes, etc...)



Development Overview

- Development for SPT/SITE/VT and proposal submission system is basically complete (all requirements met).
 - Upgrades still required for new SIs/modes or updates to existing SIs/modes.
 - *Exception: spectroscopy support for SITE (see below)*
- Issues filed as Software Problem Reports (SPRs) and assigned to upcoming releases based on operational needs and resource constraints.
- Personnel (FTE):
 - Sean Colgan (NASA): SPT/VT/SITE (<1.0 on-going)
 - Lan Lin (USRA), R. Krzazcek (RIT): Proposal submission system (~0.5 each, as needed)
 - Li Sun (USRA): Planning database infrastructure/applications: (~1.0, as needed)

SOFIA DCS: SOFIA Instrument Time Estimator (SITE)

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

Username: [rshuping] Password: [.....] Sign In

Message Of The Day
SITE Known Issues have been updated, see SITE for more info. DCS 1.5.0

SOFIA Instrument Time Estimator (SITE)

SOFIA Instrument Time Estimator (SITE)

In the four sections of this form, select the instrument, astronomical source, telescope, observing condition constraints and click the **Calculate** button to submit the parameters from all the sections to the server. The results are reported in a separate web printed.

Please Check 'Notes and Known Issues' Before Proceeding

Instrument: FORCAST

Instrument properties: [more info](#)

Filter: 24.2 um 31.5 um [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 9.50E-2 Jy
Spatially integrated brightness for the long wavelength filter 2.07E-1 Jy

Extended source having uniform surface brightness 1.796E-2 Jy / sq
Surface brightness for the long wavelength filter 3.520E-2 Jy/sq arc

Emission line: [more info](#) in addition to the above continuum. The output SNR or observing time will be line.
Single emission line at wavelength 24.2 microns with line flux 0.0 W/m^2
Emission line at longer wavelength 31.5 microns with line flux 0.0 W/m^2

Observing Condition Constraints
Note: For Early Science measurements at an altitude of 35000 feet (with FORCAST), 27 microns is a typical at 41000 feet with FLITECAM or HAWC, 7 microns is a typical value. You can read the explanatory notes for water vapor overburden.

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

Notes and Known Issues

- Under some circumstances, the label next to the long wavelength channel flux box does NOT change. R the units displayed alongside the short wavelength channel box, which can be changed by the user from the
- When the filter selections are changed, the entries in the flux boxes change to their default values (these S/N of 4 is obtained in 900 seconds). The entries are set to the default values REGARDLESS of the values "Calculation Method" boxes. Furthermore, the entries follow the units set alongside the short wavelength b
- The line flux units when Extended Source is selected are incorrectly displayed as W/m^2 or erg/s/cm^2. W/m^2/pixel or erg/s/cm^2/pixel. [SPR509]
- Note that SITE does NOT do any unit conversions for user-entered values.
- To prevent any confusion regarding values and units, the user should perform these steps in the followi

SOFIA Instrument Time Estimator (SITE)

https://dcs.sofia.usra.edu/site/calculate/instrument

DCS: SOFIA Instrument Time Esti... Instrument Time Estimator (SITE)

SOFIA Instrument Time Estimator (SITE)

FORCAST

Outputs

Atmospheric transmission	0.93359	0.83406	
Total Integration Time	966	1983	seconds
Overhead time		258	seconds
Total time		2242	seconds

At 1983 seconds SNR for filter 24.2 is 5.7

User Inputs

Filter name	24.2	31.5	
Band center	24.240	31.460	microns
Band width	2.900	5.660	microns
Source type		point	
Total continuum flux	0.095	0.207	Janskys
Elevation angle		40.0	degrees
Zenith water vapor		27.0	microns
Total signal to noise		4.0	

Instrument Parameters

Apparent source size	4.000	4.300	arcseconds
Observing Efficiency		0.884	

SOFIA Proposal Tool (SPT)

The screenshot displays the SOFIA Proposal Tool (SPT) interface, divided into two main sections: Proposal Information and Observation Details.

Proposal Information (Top Window):

- Proposal ID:** Unsubmitted Phase I Proposal (Shuping_Cycle1)
- Title:** Mid-Infrared imaging of the W40 Star Forming Region using SOFIA-FORCAST.
- Abstract:** identified using near-IR spectra. The W40 region is one of just a handful of high-mass star forming regions within 1 kpc of the sun and thus provides an important laboratory for understanding the nature of star and cluster formation. We intend to model the complete SEDs for our sources in order to derive stellar luminosities, disk masses, envelope masses, and infall rates and then compare those parameters to the known spectral types we have derived from near-IR spectra that we have obtained from the IRTF. The mid-IR fluxes provided by FORCAST are critical in constraining the model parameters. In addition to studying the known IR

Observation Details (Bottom Window):

- Observation:** Observation 2: W40 of Unsubmitted Phase I Proposal (Shuping_Cycle1)
- Instrument:** FORCAST
- Target Name:** W40
- Source Type:** Sidereal
- NAIF ID:** (Field with NAIF ID Selection List dropdown)
- Coordinates (J2000):** RA: 18 31 29, DEC: -02 05 24
- Proper Motion (" /yr):** RA: 0, DEC: 0
- Instrument Configuration:** IMAGING, None Selected, None Selected
- Instrument Mode:** C2NC2, Overheads - Constant (secs): 0.0, + Factor: 4.0
- Integration Time (secs):** 5, Alternate Overhead: 0, Default Overhead: 20.0, Duration: 25.0
- Map Area:** 0.0 arcmin X 0.0 arcmin
- Order of Observation:** (Empty field)
- Priority:** Low
- Time Critical Observation:**
- From Month/Day/Year:** None Selected
- To Month/Day/Year:** None Selected

Navigation and Status:

- Buttons: Edit Observation 1: W40, New, Edit Observation 3: W40
- Table Headers: Observa..., Instrument, Target Name, Source Type, NAIF ID field, RA, DEC, Instrument, Instrumen..., Integratio...
- Show: Observation
- Status: 17 errors & warnings (Click for Details)

SOFIA Target Visibility Tool (VT)

SOFIA Visibility Tool

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

SQL select distinct

Homepages Job Search Rec Mags Reviews (141) ISD Astro SOFIA SSI Media Fax WolframAlpha Qwest Modem Travel

Username Password Sign In

Observation Planning

Message Of The Day
SITE Known Issues have been updated, see [SITE](#) for more info. DCS 1.5.3

Target Visibility Tool (Beta Release)

If the browser print function does not work use the buttons below.

File Help ?

Close Window

Plot True Plane Heading Plot Target Elevation Edit Targets Clear Plot

Target

Name:

SIMBAD*/Sol Sys target:

RA : h m s

Dec : ° ' "

Take-off Location

Location:

Longitude: ° ' "

Latitude: ° ' "

Date

Year:

Month:

Day:

Start Time (UT or Local hr):

Duration (hr):

Start Time is Local Set Starttime to Now

* Centre de Données astronomiques de Strasbourg, France ^ West Longitude is negative

Known Issues

- Under Mac OSX 10.5 and some versions of Mac OSX 10.6, the plot window goes blank if you switch to another tab in the browser and then switch back to the VT tab. Activating either of the "Plot" buttons will restore the plot. Behavior not evident under other platforms.
- VT currently works with comet designations of the form "C/2008 Q3" or "P/2006 T1" or "169P/NEAT". There are unresolved problems with using alternate forms, especially if the name of the comet is added to either of the first two forms listed above, or if only the comet name is entered with no accompanying numerical information. Not using the correct format may result in incorrect coordinates with no corresponding error message. For more details see SPR510.

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



There are Total 13 Records found.

[UpdateStatus](#) [Get Selected PDFs](#)

PropID	Get PDF	Title	Status	PI	Co-Is	TAC Grade	TAC Member	SMO Member	Time Awarded (minutes)	Time Requested (minutes)	Instruments	Objects
81_0007	<input type="checkbox"/>	Test	Declined									
81_0008	<input type="checkbox"/>	test dcsweb121	Approved									
81_0012	<input type="checkbox"/>	Test Ops Sim 6	Declined									
81_0013	<input type="checkbox"/>	GREAT Observations of Orion	Approved									
81_0014	<input type="checkbox"/>	Nebulae: planetary, reflection and peanut	Approved									
81_0015	<input type="checkbox"/>	Twinkle, twinkle variable stars.	Approved									
81_0016	<input type="checkbox"/>	Ionized, we Shine	Approved									
81_0017	<input type="checkbox"/>	Far Out	Approved									

SOFIA DCS: Proposal Detail

Welcome, rshuping. ([View Profile](#)) ([Logout](#))
 DCS User Group: SSMOC,dcsdevelop,SMO,dcsadmin

Message Of The Day
 SITE Known Issues have been updated, see [SITE](#) for more info.



Proposal Detail

test

Prop ID: 81_0049

Status:

Total Time Request: 39.50 (minutes)

Total Time Planned: 59.50 (minutes)

Total Time Awarded: (minutes) [help]

TAC Grade: [help]

TAC Member: [help]

SMO Member: [help]

New Note: [help]

Review Comments: [help]

Last Modified: 2011-02-17 23:06:33.0

Proposal Document: [View]

Notes and Comments

Proposal Cover

Proposal

Basic Science Proposal Submission

- **First real-world use of SPT/SITE and proposal submission system:**
 - Overall, system worked as designed
 - 165 submission/resubmission transactions with 9 errors.
- Total Proposals Received: 60
- Submission loads were modest and well within our system stress test benchmarks:
 - Last 24 hours: 90 proposals submitted.
 - 24 hour system stress test: >1000 proposals submitted.
 - Peak submission rate: 1 proposal/min (not sustained)
 - System stress test: 120 proposals in 2 minutes.
- Issues and Lessons Learned:
 - One lost proposal – situation understood, documented.
 - 22 Software Problem Reports (bugs) filed (SPT/SITE/VT).
 - 2 procedural issues identified.

Issues with SPT/SITE/VT

- SITE Issues:
 - Clean up input flux handling (SPR 509)
 - Synchronize units in SITE and SPT (SPR 629)
- VT Issues:
 - Fix/update astronomical name resolution (SPRs 510, 721, 722)
 - User interface clean-up (SPRs 217, 442)
- SPT Issues:
 - Improve error/status messages (SPRs 536, 633)
 - Fix support for GREAT frequencies (SPR 549)
 - Issues with cover info data (SPRs 380, 533)
 - UI Issues (SPRs 520, 538, 551)
 - Improve PDF handling (SPR 543, 592)
 - Synchronize units with SITE (SPR 630)

SI Configurations to be offered for Cycle 1:

FORCAST Imaging (SUP)
FORCAST Grisms (Shared Risk)
GREAT Low (SUP)
GRAT Medium (Shared Risk)
FLITECAM Imaging (SUP)
FLITECAM Grisms (Shared Risk)
HIPO (SSI)

SPT/SITE Support for Cycle 1

- Do we support all Cycle 1 SIs in SPT?
 - Yes, not hard and streamlines proposal preparation/review.
 - Only issue would be accuracy of overheads for Shared Risk SIs and HIPO.
- Do we support all Cycle 1 SIs in SITE?
 - Yes for SUP SIs
 - Not clear that we will have good sensitivity numbers for Shared Risk SIs. Could provide expected sensitivities via static look-up-tables/plots on SOFIA website.
 - What about HIPO?



Updates to SPT and Proposal Submission System

- Need specification of SI configurations and modes to be offered (Documented in SI-DCS ICDs) from Cycle 1 SI teams ASAP:
 - Filters/grisms available
 - Overheads for each observing mode
- Need to update SPT and proposal submission system to support new configurations and modes.

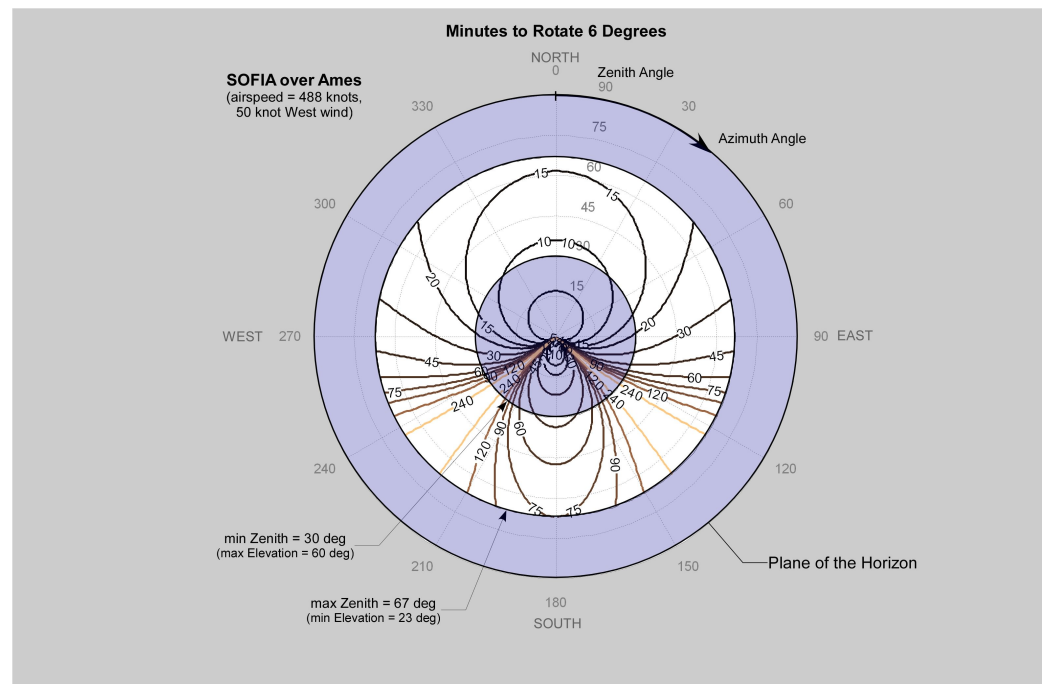


Updates to SITE/VT

- *SITE currently supports imaging modes only. Need to provide support for spectroscopic modes as well:*
 - Sensitivity as function of wavelength
 - Update to atmospheric modeling (ATRAN)
 - Slit-losses and other throughput considerations
- Need *current* (best available) sensitivity estimates/algorithms for all SI configurations/modes (documented in SI-DCS ICDs) from Cycle 1 SI teams ASAP.
- Need maximum integration time calculator for VT, based on mean time between LOS resets.

Updates to VT.

- Should consider adding maximum integration time calculation to VT (or SITE?), based on mean time between LOS rewinds – very useful for GIs observing faint objects.



DCS v2.0 Development Schedule (SITE/SPT/VT)

- July: Delta Design Review
- July - Aug: Implementation and informal test
- Sept: Test Readiness Review
- Sept: Formal Testing
- Sept. 30: Release of SITE/SPT/VT
- **Oct: Cycle 1 Call for Proposals**

Proposed Prioritization

- 1. Updates to SPT and proposal submission system to support all instruments/configs/modes for Cycle 1.**
 - Needed to ensure efficient/effective proposal handling.
- 2. Update SITE with current sensitivities for all Cycle 1 SIs.**
 - Needed to ensure that GIs enter correct integration times into SPT.
- 3. High priority SPRs (SPT/SITE)**
 - Issues that affect usability or clarity
- 4. Add spectroscopic functionality to SITE for Grisms and GREAT.**
 - Spectroscopic sensitivities *could* be provided via static look-up-tables/plots on SOFIA website (*Not Ideal*).
- 5. Add maximum integration time calculator to VT.**
- 6. Low priority SPRs (SPT/SITE/VT)**

Schedule Issues

- Currently not enough resources to complete all bug fixes and updates required in time for CfP.
 - SPT/SITE development lead (Sean Colgan) is part-time and also working on KOSMA translator software.
- Mitigation:
 - Add resources: Not clear we can get someone up to speed fast enough to make these updates.
 - Reduce Scope:
 - SPT changes **must** be done to ensure that we can handle submitted proposals effectively and efficiently
 - SITE changes could be scaled back, e.g. provide sensitivities only for fiducial wavelengths. *May not provide enough schedule relief.*
 - Note that SITE updates are not **strictly** required from data handling perspective; time estimates for Grism modes could be provided by some other method.

The SOFIA Data Cycle System

<http://dcs.sofia.usra.edu>

14 Nov. 2011: *New version of SPT for Cycle 1 available for download.*

12 Dec. 2011: *Update to SITE; DCS open for proposal submission.*

27 Jan. 2012: *Proposals Due; DCS closed*

DCS Help Resources

- <https://dcstest.sofia.usra.edu/userSupport/dcsUserGuide.jsp>

SOFIA Help-Desk:

- sofia_help@sofia.usra.edu