

Observing Time Utilization

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Types of SOFIA Observing Time in Table



- General Investigator Time
 - Selected investigations from the annual Call for Proposals
 - 80:20 split in offered time
- Guaranteed Time
 - Given to the instrument teams as reward for developing instruments for SOFIA
 - Separate US and German processes
 - US allocations defined in Science Utilization Policies
 - German allocations set by mutual agreement at GSSWG
- Director's Discretionary Time
 - Set at 7% of the science time
- Calibration Time
 - Time charged to the observatory to maintain calibration
 - Includes setup star at beginning of flight
- Other
 - Everything else, including climbs, descents, dead legs, and engineering tests
- Not Included are Commissioning Flights, Ferry Flights, and pure Engineering Flights





Cycle 3 Time Utilization (Actuals)



Campaign	Net Flights	Instrument	Flight Hours	GTO Hours	GI Hours	Cal Hours	DDT Hours	OTHER	Notes
OC3A	1	EXES	47.67	21.38	14.62	5.47	0.00	6.21	1 Cancelled
OC3B	8	FIFI-LS	75.63	12.85	44.25	9.50	0.91	8.12	
OC3C	6	FORCAST	53.45	3.22	29.87	12.70	0.00	7.62	
OC3D	7	FORCAST	66.22	6.08	40.91	12.83	0.00	6.39	3 Cancelled
OC3E	2	FLIPO	13.91	4.83	4.20	0.00	0.00	4.88	
OC3G	5	GREAT	47.69	22.92	16.26	3.50	0.00	5.02	1 Cancelled
OC3H	5	EXES	29.31	5.83	14.57	4.70	0.00	4.21	
OC3I	5	FORCAST	46.44	1.54	29.48	9.30	0.00	5.42	1 Cancelled
OC3J	3	FLITECAM	28.18	3.03	13.28	7.92	0.00	3.96	1 Cancelled
OC3K	9	FIFI-LS	74.15	20.70	30.58	13.13	0.00	9.73	
OC3L	9	FORCAST	83.47	6.81	50.35	16.82	0.00	9.49	In Progress
OC3M	10	GREAT	93.75	13.65	47.23	8.65	20.17	12.05	In Progress
Totals	70		659.86	122.86	335.59	104.52	21.08	83.08	

As of 13 Nov 2015

OC3L and OC3M are scheduled times



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Director's Discretionary Time



- DDT is set at 7% of the science time by the Science Utilization Policies SOF-1087 (Jan. 2008)
- Allocated to Science Center Director for:
 - Targets of Opportunity not specified in annual CfP
 - Special projects the Director feels are good for the Observatory
 - Potentially high impact observations that were too risky to pass the TAC process
- Based on 400 Science hours in Cycle 2 and 625 Science Hours in Cycle 3, the DDT allocation was estimated as 28.0 and 58.8 hours, respectively.
 - 17.86 hours in Cycle 2 used
 - 21.08 hours in Cycle 3 used





Use of DD Time to Date



	P.I	Title	Instrument	Obs Date ²	Time (hr)
02_0100	P. Garnavich (Univ. of Notre Dame) ³	"Mind the Gap: Filling in the Holes in IR Spectra of Type 1a Supernovae"	FLITECAM	Feb 2014	11.90
75_0001	R.T. Hamilton (USRA/SOFIA)	"Observations of a Bright Type Ia Supernova in M82"	FLITECAM	Feb 2014	
75_0002	R.D. Gehrz (Univ. of Minnesota)	"Probing The Ejecta And Surroundings of SN 2014J In M82"	FORCAST	Mar 2014	
75_0003	W. Vacca (USRA/SOFIA)	"FORCAST Observations of a Bright Type Ia Supernova in M82"	FORCAST	Mar 2014	
-	J. Spyromilio (ESO) ⁴	"DDT proposal to observe Supernova 2014J (J09554214+6940260) in M82 with SOFIA"	-	-	
75_0014	Jochen Eisloffel	Catching the Outbursting New FU Orionis object 2MASSJ06593158-0405277 on the Rise	FORCAST FIFI-LS	Feb 2015 Sep 2015	1.71
	Erick Young	Director's Project upGREAT Demonstration [C II] map of Horsehead Nebula	upGREAT	Dec 2015	4.17
	Erick Young	Compensation Time for GREAT support of US General Investigators -- 1 hour of DDT per 6 hours of US GI time	GREAT	Cycle 2 Cycle 3	21.16





GREAT Compensation Time

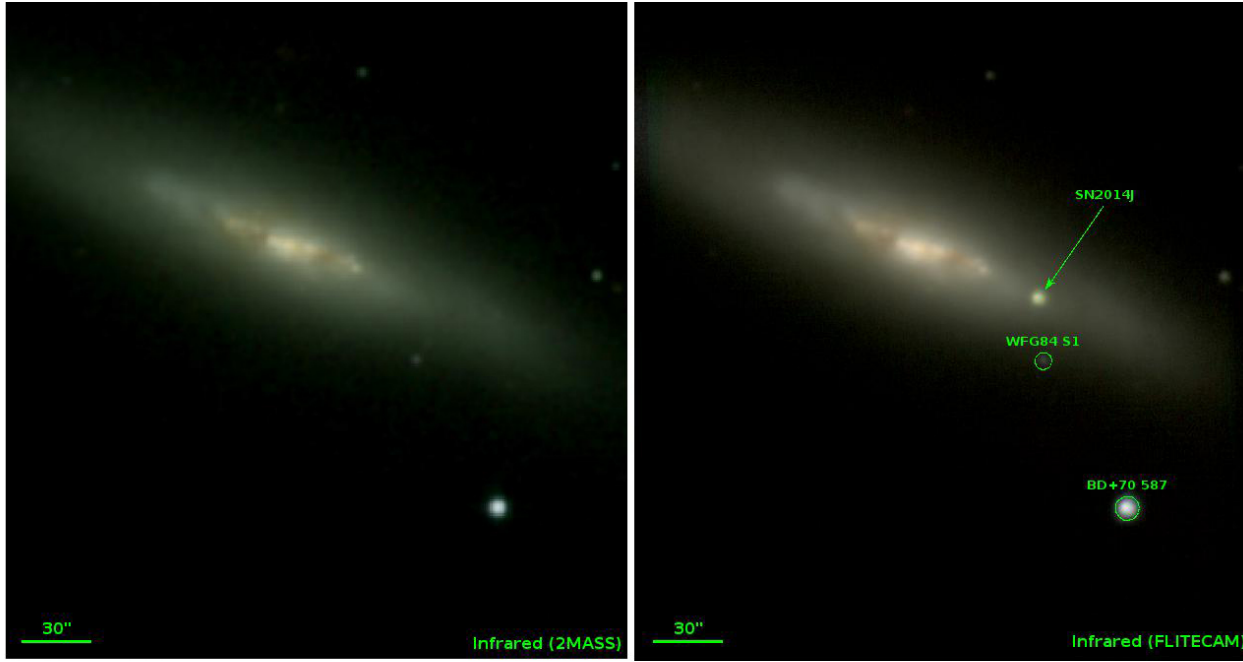


- DD Time awarded to GREAT Consortium as compensation for support of US community since GREAT is funded by Max Planck Society
 - Instrument support
 - Flight support
 - Data processing to Level 3
- Algorithm used is 1 hour of compensation time for every 6 hours of US GI time





SOFIA Observes Supernova 2014J

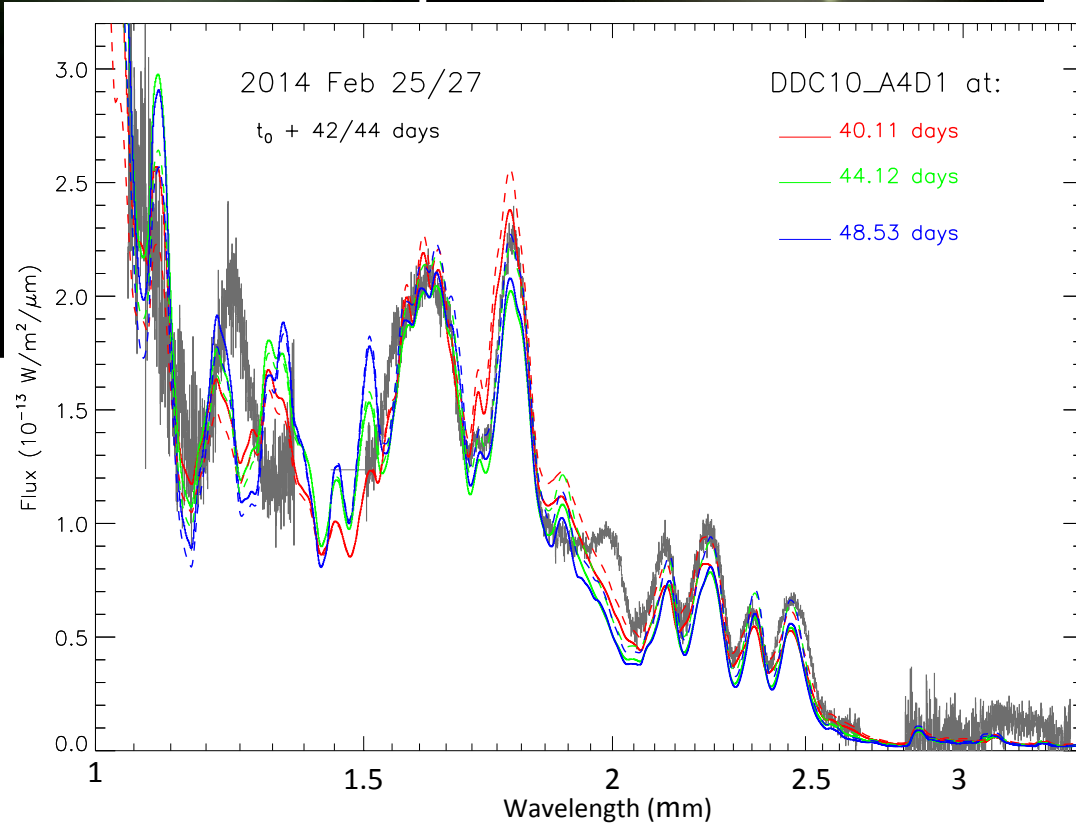


Vacca et al. 2015



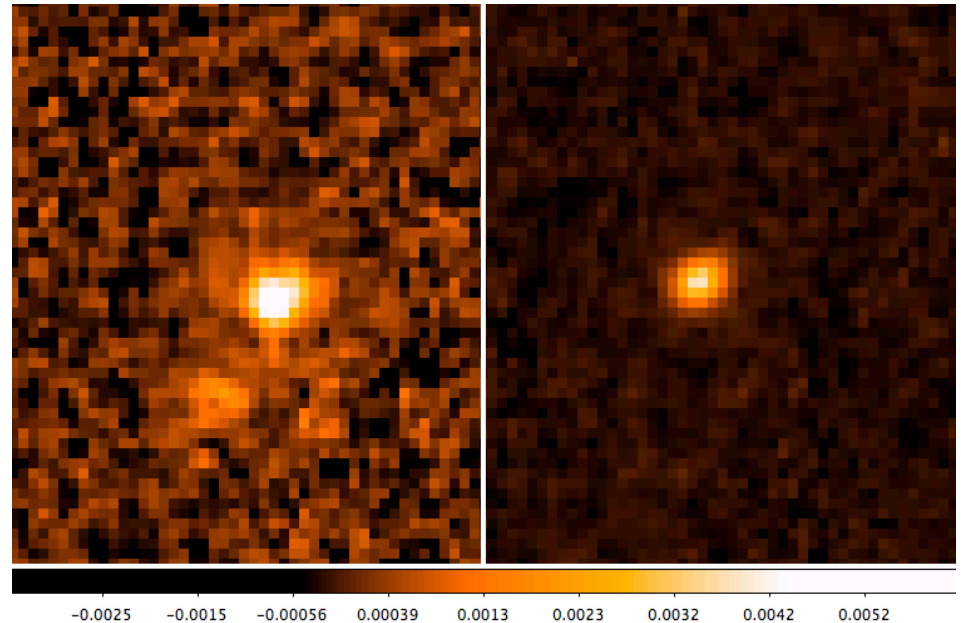
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Vacca et al. 2015

- Accretion during the formative stages of low-mass star evolution is an important component of the total luminosity.
- This accretion is known to be episodic with long periods of quiet between events
- Archetype of the most dramatic type of outburst in FU Ori which increased in in brightness by 6 magnitudes in 1936 and has remained bright since then.
- 2MASS J06593158-0405277 is a recently discovered member of this class and gives an opportunity to make IR measurements of this rare event.
- DDT proposal was submitted by Jochen Eisloffel (Thuringer Landessternwarte Tautenburg, Germany) and accepted.



FORCAST observations of 2MASS J06593158-0405277 at 37 mm (left) and 11 mm (right). This is a rare FU Ori type young star that has suddenly brightened. Corresponding far-IR observations with FIFI-LS were also taken in March.

DDT Program of Jochen Eisloffel



SOFIA Demonstration Observation



- Motivation for this observation was multifold:
 - Highlight a new capability that would be of wide interest to the SOFIA community
 - Provide a scientifically relevant data set for analysis
 - Demonstrate SOFIA's capability to deploy state-of-the-art instrumentation
 - Provide useful materials for science and public outreach
- Planned observations
 - [C II] 158 mm map of the Horsehead Nebula with the upGREAT 14-pixel array
 - Observations are scheduled for 10 December 2015





Horsehead Optical

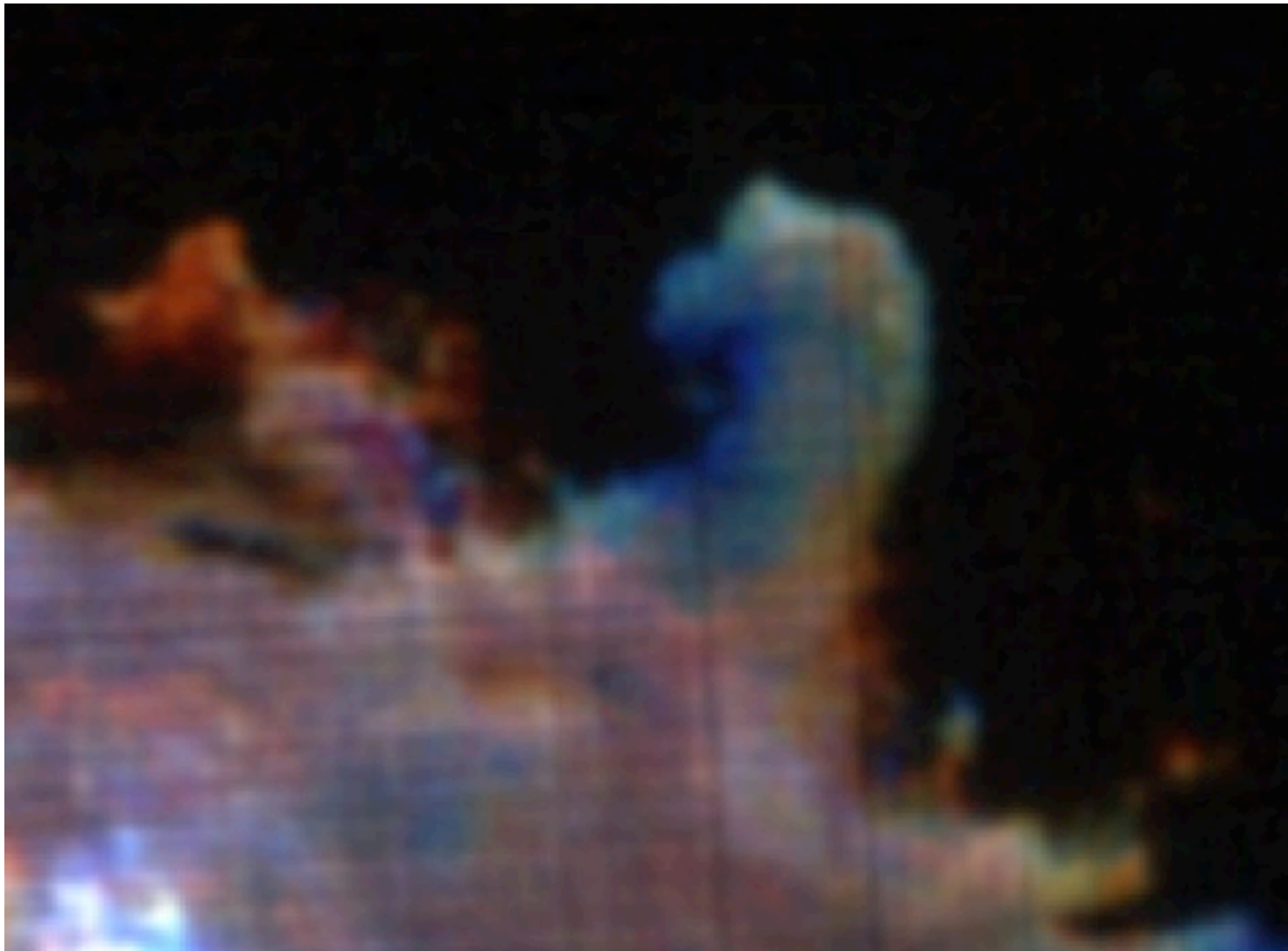


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Horsehead CO 3-2 Supercam

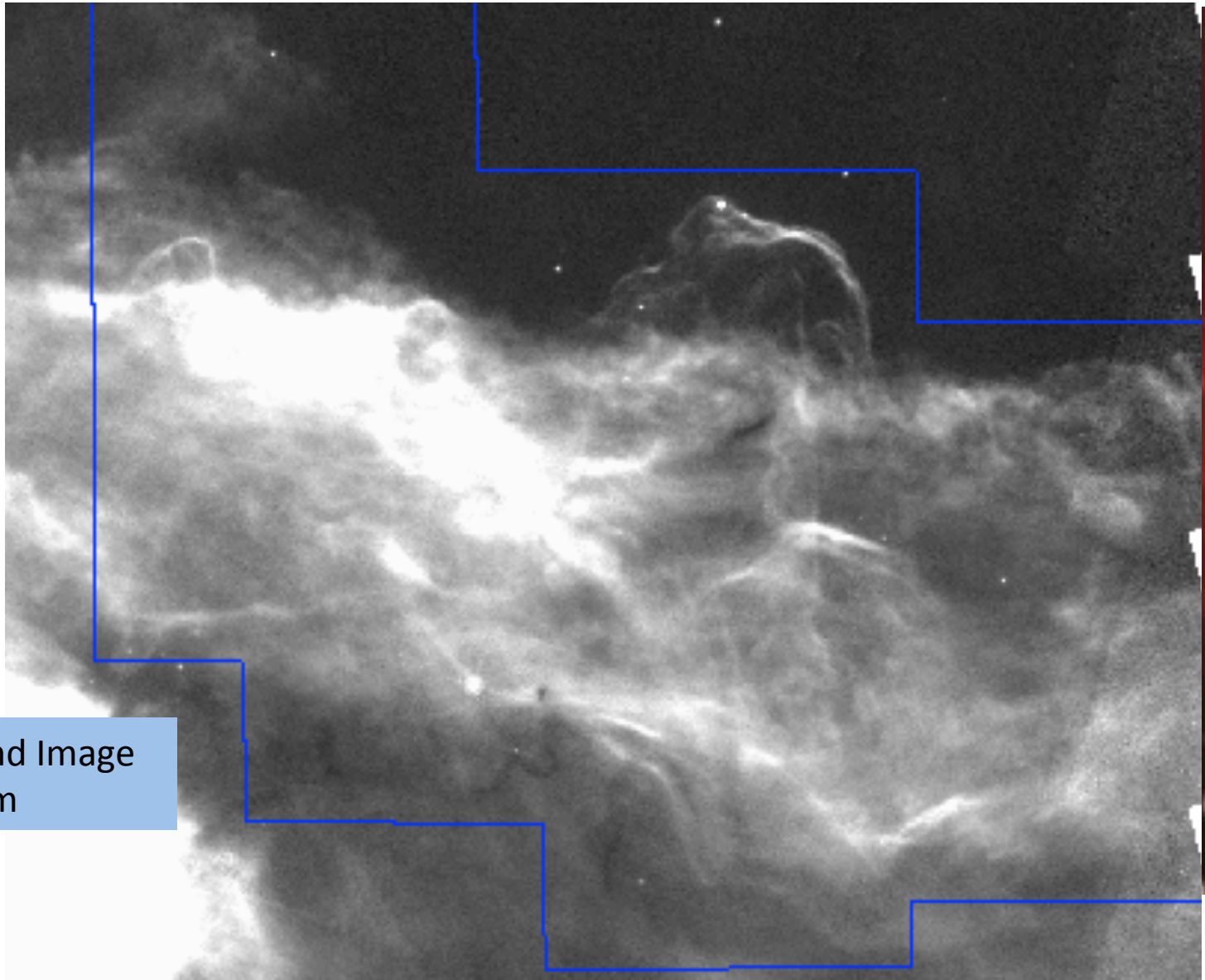


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Horsehead upGREAT Map Region



Background Image
IRAC 8 mm





Plans for Demonstration Observations



- Roughly $\frac{1}{2}$ of a flight has been scheduled for this demonstration observation
- Data will be reduced to Level 3 as quickly as possible
 - Program will be advertised via our newsletter, website, and AAS
 - Anticipated release will be February 2016
- We will produce a paper documenting the observations but not include any scientific interpretation
- Data will have no proprietary restrictions
- Question for SUG: What are the optimal data products that would maximize community participation?





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