



HAWC+ Status Update

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HAWC+ Status Background



- HAWC+ experienced in-flight vibration-related thermal control issues in early commissioning flights.
- The instrument team (led by PI Dowell, JPL) has performed analysis and repair work, improving thermal stability significantly over initial MAY 2016 flight configuration
- *Further work is required to improve ADR hold time and instrument sensitivity*, both of which are below SI performance requirements.
- The instrument will not be formally accepted until this work is complete, but the improved thermal performance achieved to date allows execution of some important science programs.
- Excellent data (images + polarization maps) for GTO and a few





HAWC+ Status and Plan Forward



- The Program Office has adopted an approach *that prioritizes preservation of high-priority science flights* awarded as shared-risk and implementing technical fixes between awarded flight series to bring the performance of the SI in line with performance requirements.
- This approach will be implemented as follows:
 - A December 2016 flight series was recently completed, including four additional commissioning flights and three shared-risk science flights.
 - Possible technical work in the January-April 2017 window to improve performance, to be done on a *non-interference, non-invasive* basis with performance of the subsequent science flight series.
 - Execution of awarded science observations in May, September, and November 2017.
 - Focused work on technical performance improvements toward completion and formal acceptance in January 2018



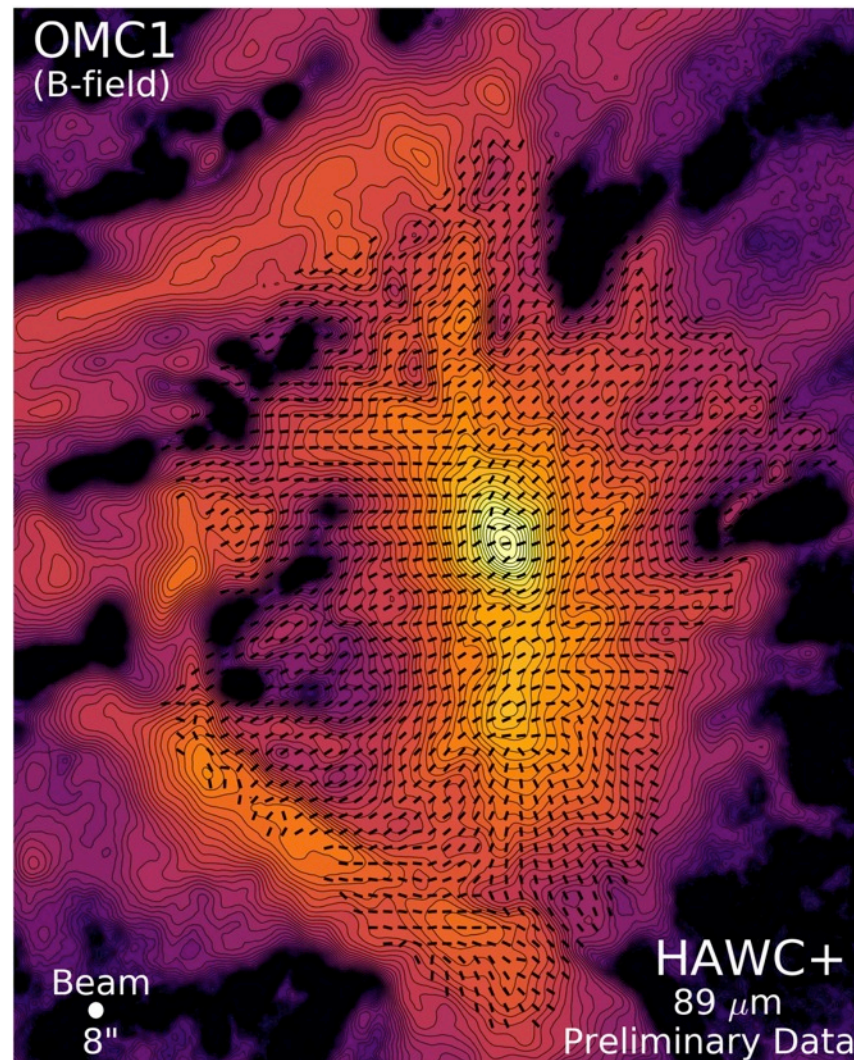
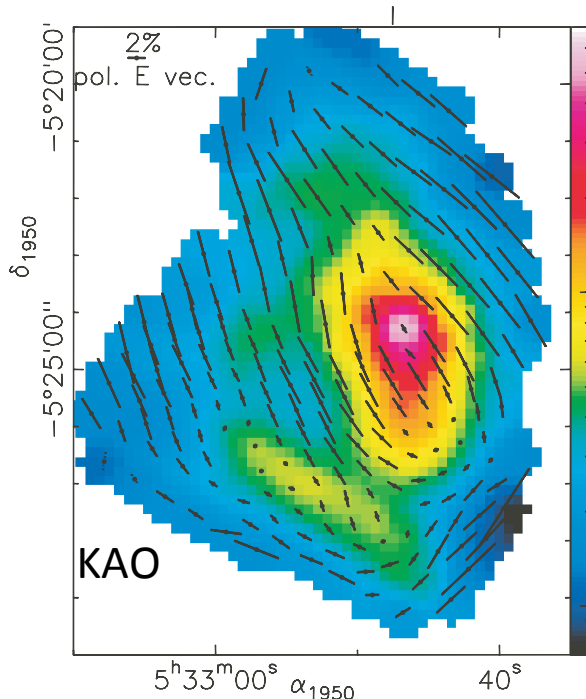


HAWC+ Science Highlight



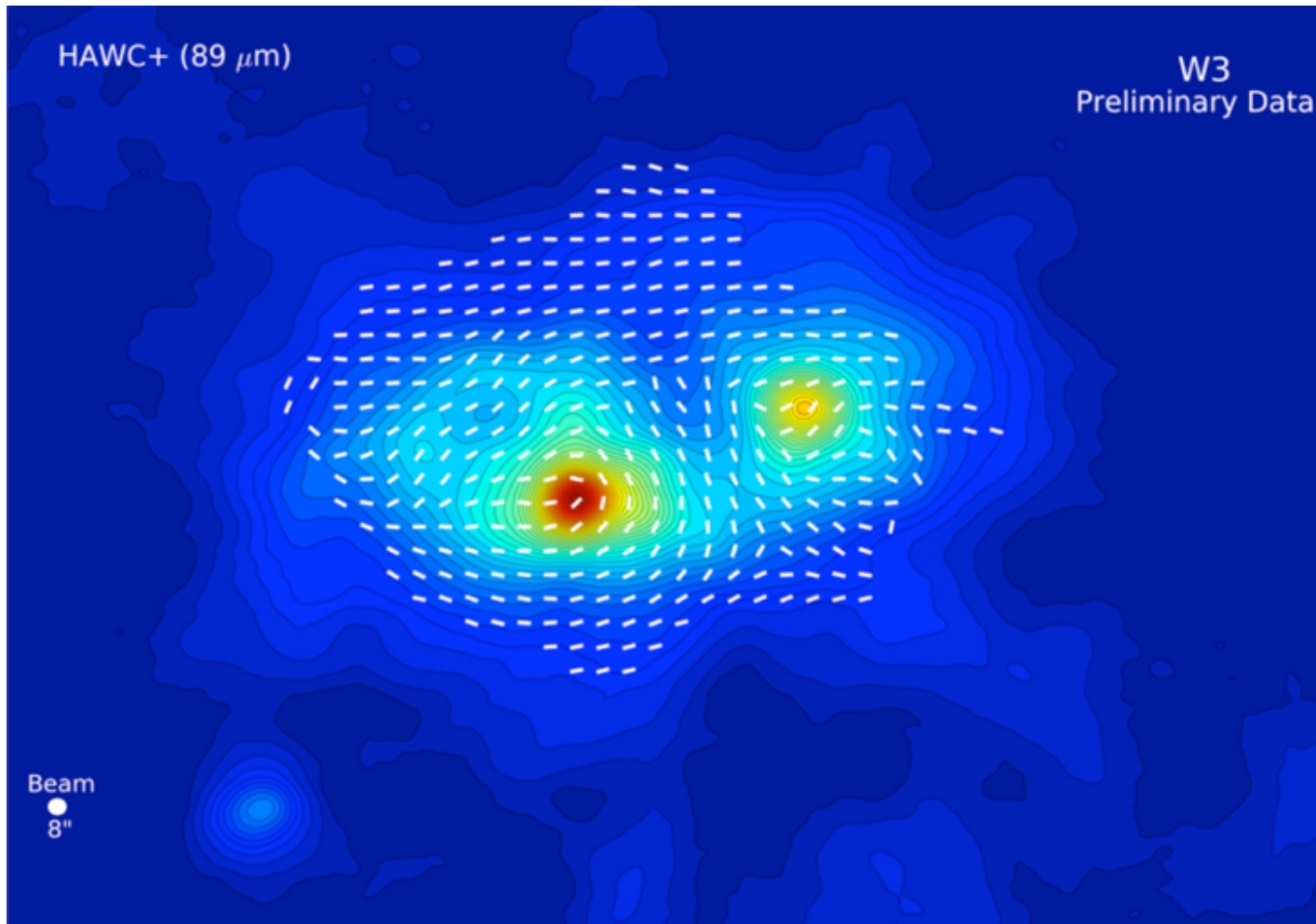
Dust-induced polarization traces structure and strength of the interstellar magnetic field, which plays an important role in star formation.

Note: the KAO data show E-vectors; the SOFIA data show, rotated, B-vectors





HAWC+ “First Light”



This HAWC+ image shows how dust grains are aligned in the W3 star-forming region, a giant molecular cloud in the constellation Cassiopeia 2 kpc from Earth. Polarization vectors depict the orientation of magnetic fields

Credit: NASA / SOFIA / Caltech / Darren Dowell





Cycle 6 Plan



- Call issue: end of April 2017
- Call update: June 2017
- US Proposal deadline: ~July 1, 2017
- German TAC deadline: ~July 8, 2017
- US TAC: week of 14 August 2017
- German TAC: week of 28 August 2017
- Selections announced: October 2017





SOFIA Cycle 6 Assumptions



- PPBE Guidance
 - 104 Science Flights
 - NASA: 476 CfP Hours
 - Note: Assumes 50 US GTO hours
 - DLR: 84 CfP Hours
 - Note: Assumes 55 DE GTO hours (33% German of allocation)
- Cycle 6 period: 1 February 2018 – 31 January 2019
- Southern Hemisphere Deployment in June-July
 - Two instrument baseline
- Available US funding: \$5 M





Cycle Comparison Table



	Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5
CfP Date	14-Nov-11	29-Apr-13	29-May-14	1-May-15	29-Apr-16
Cycle Execution	Jun 2013- Feb 2014	Feb 2014- Feb 2015	Mar 2015 - Jan 2016	Feb 2016 - Jan 2017	Feb 2017 - Jan 2018
US Hours Offered	200	175	450	500	476
DE Hours Offered	48	47	45	80	75
US Proposals	132	89	122	155	179
DE Proposals	39	27	31	30	26
US Hours Requested	1293	545	1075	1582	1749
DE Hours Requested	186	67	104	150	221
US Approved Proposals	42	62	63	80	71
DE Approved Proposals	18	19	24	18	15
US Hours Awarded*	178	165	419.5	478.3	462
DE Hours Awarded*	52.5	43.8	45.8	80.4	74
Hours Executed	149	173	327	275	

* Does not include "Do If Time"

As of 1 Oct 2016

