



## Status of the THEMIS GBOs

Emma Spanswick<sup>2</sup>, H.U. Frey<sup>1</sup>, E. Donovan<sup>2</sup>,  
S.B. Mende<sup>1</sup>

<sup>1</sup>SSL, University of California, Berkeley,

<sup>2</sup>University of Calgary, Canada



SITE	STATUS	ISSUE	Expected Return
ATHA	✓ Imaging	---	---
CHBG	~ Imaging	Intermittent PC Issues	After Christmas
FSIM	✓ Imaging	---	---
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GBAY	Unknown	Road out to the site has not been plowed, no custodian intervention yet.	Unknown
GILL	✓ Imaging	---	---
INUV	✓ Imaging	---	---
KAPU	✓ Imaging	---	---
KUUJ	Not Imaging	PC failure – new PC was shipped over a week ago.	Next week
PINA	✓ Imaging	---	---
RANK	✓ Imaging	---	---
SNAP	✓ Imaging	---	---
SNKQ	✓ Imaging	---	---
TALO	✓ Imaging	---	---
TPAS	Not Imaging	Power to the ski lodge is down – there is a work order to restore power	Unknown
WHIT	~ Imaging	PC not recognizing camera (intermittent). System collecting data but dropping frames.	2-3 Weeks
SITE	STATUS	ISSUE	Expected Return
FYKN	✓ Imaging	---	---
GAKO	✓ Imaging	---	---
KIAN	Not Imaging	PC has been shipped back to SSL for check and repair.	Unknown
MCGR	✓ Imaging	---	---
NRSQ	✓ Imaging	---	---

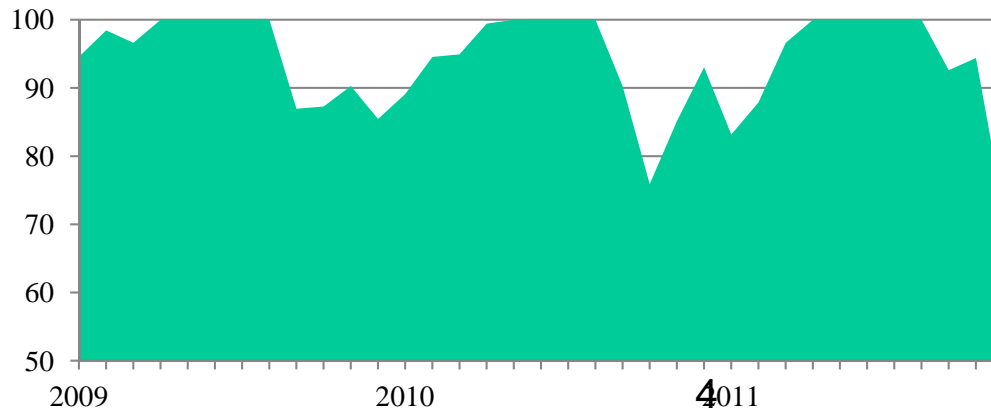
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	2009												2010												2011										
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
TALO	50	103	108	162	100	100	100	100	113	105	100	99	101	103	107	151	100	100	100	110	101	100	99	108	111	119	183	100	100	100	100	130	112	108	
SNAP	97	102	102	100	44	100	100	96	98	1	42	0	13	89	57	0	0	100	100	97	96	69	99	98	0	73	101	117	85	100	100	126	116	110	108
WHIT	66	70	90	104	119	100	100	24	20	48	88	97	101	101	102	97	113	100	100	42	56	3	5	41	108	13	104	111	139	100	100	127	116	63	35
TPAS	100	101	96	101	110	145	117	105	103	102	100	100	100	101	102	104	110	135	118	105	102	100	101	100	0	71	105	116	134	184	151	123	115	111	52
SNKQ	101	100	103	103	124	100	83	103	99	101	100	36	61	93	103	103	122	100	122	103	102	97	96	97	106	111	112	119	115	100	180	121	111	102	36
RANK	86	101	91	116	100	100	100	105	103	101	100	97	100	102	104	110	100	100	100	119	104	95	94	99	108	107	113	134	100	100	100	94	81	111	103
PINA	101	101	102	103	84	100	100	101	101	101	101	93	98	97	96	97	103	102	95	84	101	101	100	100	81	59	112	114	119	124	72	20	45	93	110
KUUJ	99	101	101	102	102	100	120	104	103	102	92	100	100	101	102	102	107	100	126	104	103	102	101	100	108	110	112	112	141	100	197	124	116	111	31
KAPU	100	94	102	102	102	103	103	102	102	101	101	100	100	101	101	102	102	103	103	102	102	97	101	100	107	110	112	114	120	115	122	116	113	110	108
INUV	101	103	102	136	100	100	100	136	92	102	99	93	100	103	106	133	100	100	100	155	104	102	99	100	107	110	118	157	100	100	100	276	122	103	108
GILL	95	101	102	98	114	100	120	104	103	102	101	98	99	101	102	103	112	100	45	99	99	99	101	100	109	108	110	117	145	100	0	0	131	111	41
GBAY	101	81	103	103	19	107	105	100	102	102	101	100	100	101	102	102	103	110	106	103	101	70	101	100	107	102	0	70	121	167	29	0	0	0	0
FSMI	95	101	104	108	181	100	100	111	103	102	100	92	99	101	103	107	160	100	100	116	105	103	101	99	108	109	112	124	213	100	100	138	117	111	106
FSIM	100	101	19	4	246	100	100	119	104	102	101	100	100	101	103	109	230	100	100	34	0	0	0	58	100	110	114	126	325	100	100	152	118	112	108
CHBG	100	101	101	81	34	94	65	76	0	0	0	0	0	0	0	0	0	24	102	92	102	101	100	100	63	108	111	48	98	139	122	4	11	71	55
ATHA	97	101	98	105	112	292	115	102	94	102	101	100	100	83	103	105	112	276	113	103	93	102	101	99	108	109	113	116	136	457	154	121	115	111	107
NRSQ	100	101	103	10	129	100	100	108	103	102	101	100	101	102	103	104	120	100	100	110	103	102	100	95	108	110	113	121	180	100	100	138	30	102	105
MCGR	100	98	97	115	100	100	100	73	81	95	88	96	99	101	95	104	100	100	100	53	0	0	0	74	95	108	110	113	100	100	100	163	118	112	86
KIAN	100	102	101	135	100	100	100	177	106	103	101	99	100	102	97	125	100	100	100	188	109	89	101	99	11	0	22	160	100	100	100	256	124	113	31
FYKN	101	102	101	123	100	100	100	67	0	60	96	97	100	101	104	121	100	100	100	151	105	9	89	99	0	0	0	0	100	100	100	0	0	0	0
GAKO	100	102	104	111	429	100	100	106	99	100	87	99	100	102	104	111	375	100	100	107	99	52	100	98	107	110	116	27	0	100	100	140	116	111	89
average	95	98	97	100	100	100	100	100	87	87	90	85	89	95	95	99	100	100	100	100	90	76	85	93	83	88	97	100	100	100	100	93	94	73	

From RT data  
(contain communications dropouts)

### THEMIS ASI - Array Average Uptime



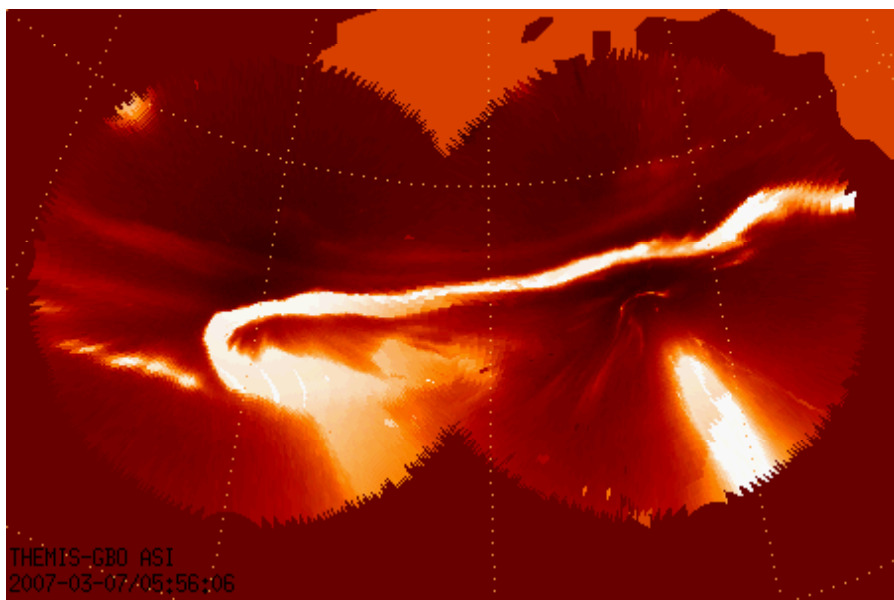
## Managing the aging array

Vast majority of our down time is associated with computer related failures and/or issues

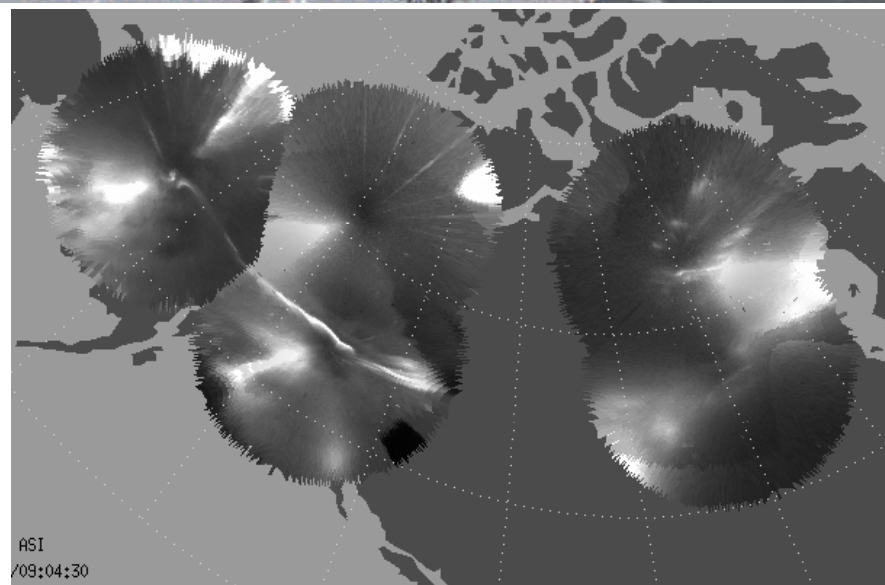
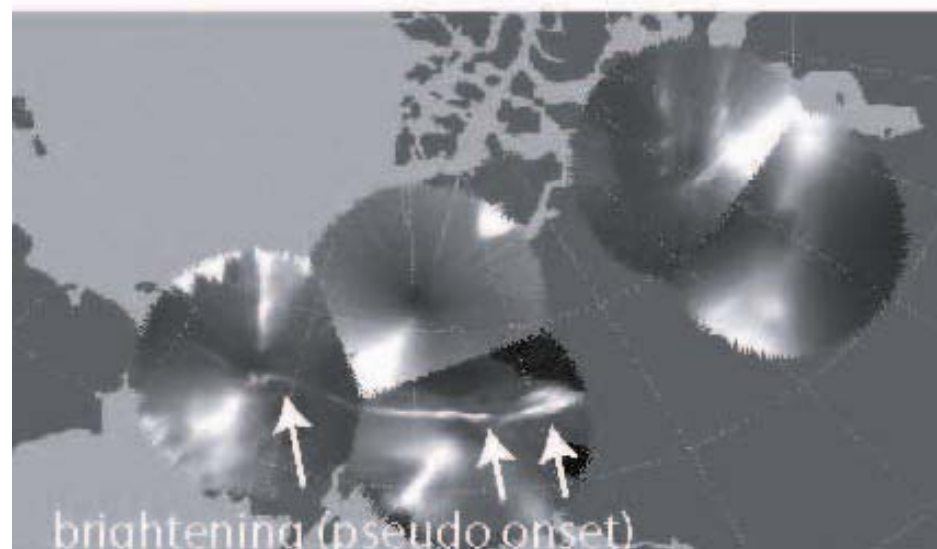
### Cause and Number of PC failures

Component	2007	2008	2009	2010	2011
Motherboard	5	7	3	2	-
Hard Drive	3	7	4	3	2
RAM	0	6	2	1	2

- Hardware aging is starting to becoming a concern for these instruments. The PCs require parts that, in some cases, are no longer in production.
- Based on our observed lifetime of these key components (and the current availability of spares) we are modifying our spare part strategy to maintain the array uptime over the coming years. We are also looking at how to replace components that are no longer available.

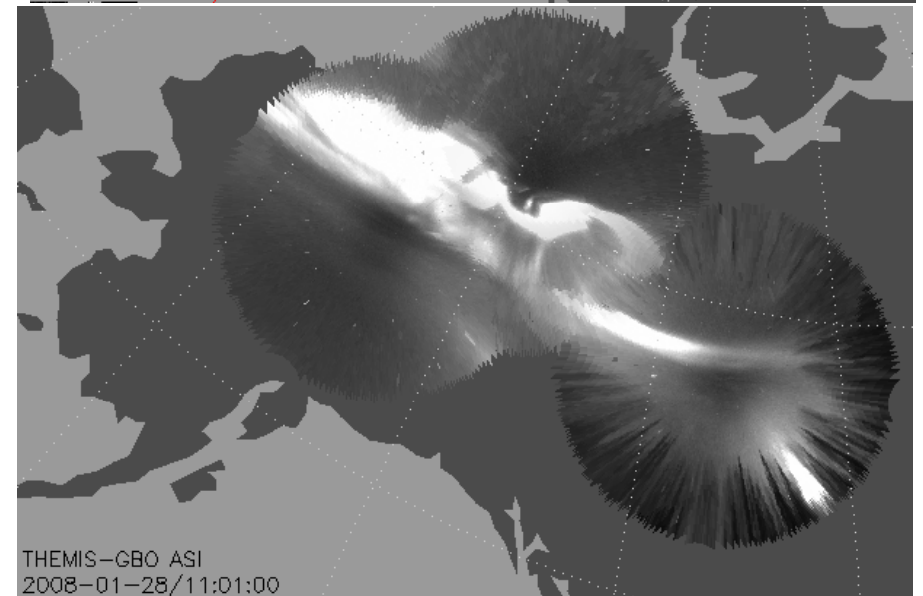
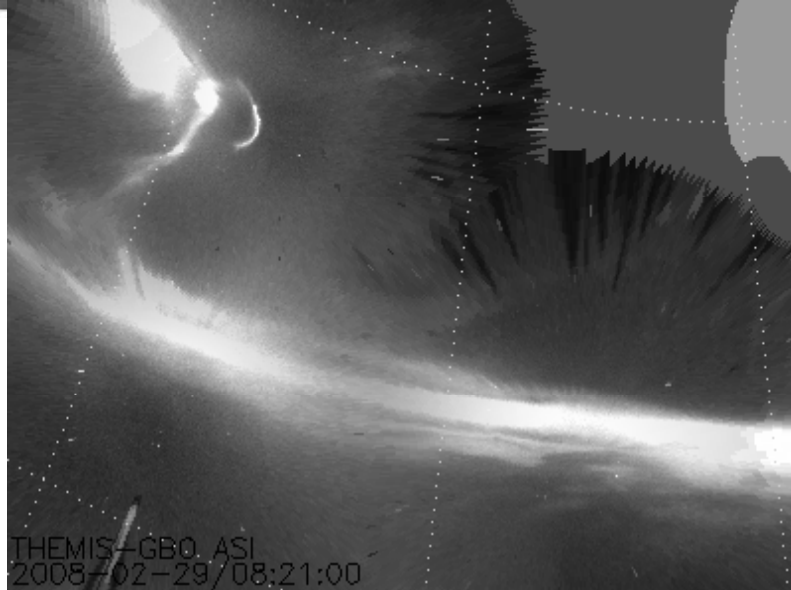
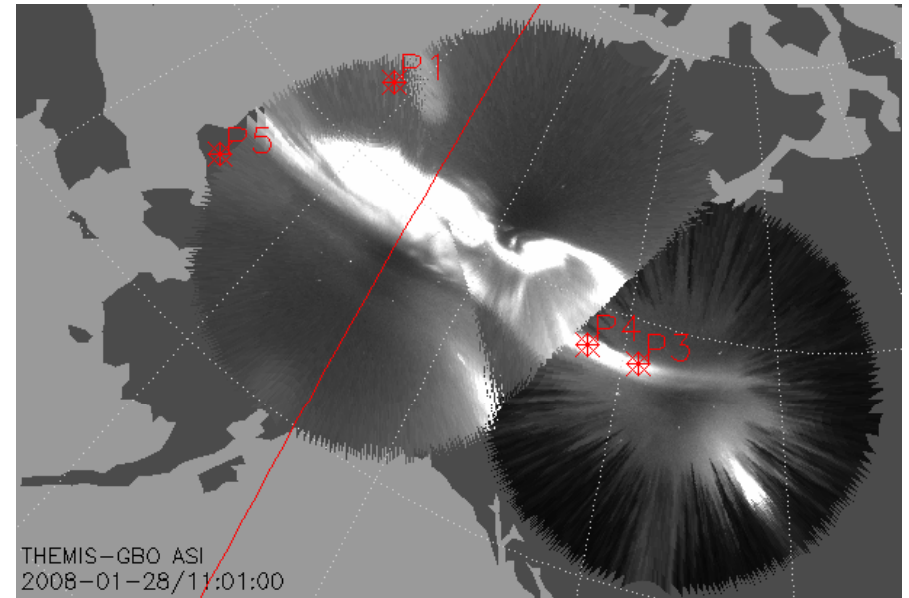
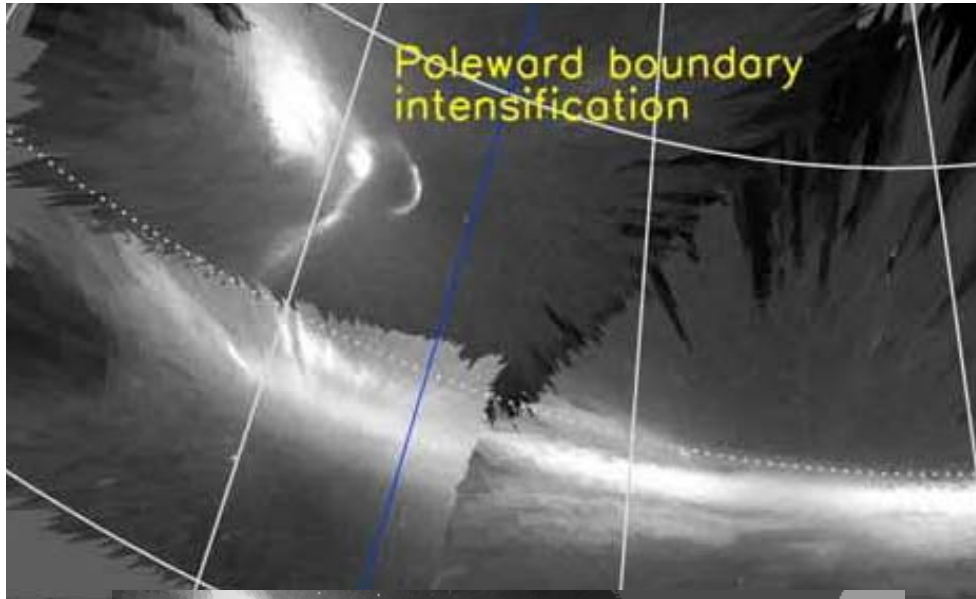


Rae et al., JGR 114, 2008JA013771, 2009



Kasahara et al., Ann. Geophys., 27, 3825, 2009





Nishimura et al., JGR, 2009JA015166, 2010

Frey et al., JGR, 115, 2010JA015537, 2010



## Alaska/Greenland GBO funding



Starting September 1, 2011 NSF is funding the operation of the Alaska/Greenland GBO for the next 5 years under the name:  
**Ground-based Imager and Magnetometer Network for Auroral Studies (GIMNAST)**

- UCB-SSL receives funding for site operations, data collection and recovery, maintenance and repairs
- UCLA receives funding for magnetometer maintenance and potential repairs
- Use of Alaska/Greenland GBO data collected after September 2011 should be acknowledged to NSF award 1004736 in addition to NASA THEMIS.
- **Use of Canada data should be acknowledged as originating from U. of Calgary with CSA funding.**