

## EOS Science Networks Performance Report

This is a summary of EOS QA SCF performance testing for the 2<sup>nd</sup> quarter of 2006 -- comparing the performance against the requirements from BAH, including Terra, TRMM, QuikScat, Aqua, Aura, and ICESat requirements

Up to date graphical results can be found on the EOS network performance web site: [http://ensight.eos.nasa.gov/active\\_net\\_measure.html](http://ensight.eos.nasa.gov/active_net_measure.html). Or click on any of the individual site links below.

### **Highlights:**

- On March 30, the NISN route for all LaRC traffic to Internet2 destinations was corrected. Rather than NISN peering with Internet2 only in Sunnyvale, CA (which was used since January), NISN now also peers in Atlanta, Chicago, and Maryland. This restored the previous performance levels from LaRC to East Coast destinations.
- Continued congestion from the EBnet router at GSFC to the “Doors”
  - Affects daily worst performance from GES-DAAC, MODIS, GSFC-PTH
  - Compare performance with GSFC-ENPL.
- Otherwise, very stable performance.
  - **GPA 3.71 !**
- UIUC, Ohio State: Test node down for this period
- User flow data is now reported for selected sites, including Integrated graphs. See below for a description of the integrated graphs. User flow for additional sites will be added in the future. But note that user flow info from LaRC is not available.
- The Internet2 Backbone is in process of being replaced, from the previous Abilene backbone, based on 10 gbps Qwest fibers, to the new Internet2 backbone, based on Level3 fibers. Multiple 10 gbps paths are available over this backbone – one of which is used for IP service, replacing Abilene. As nodes are switched, step changes in performance are often observed; sometimes more than once.
- The Jan '07 requirements are used as the basis for the ratings

### **Ratings:**

#### Rating Categories:

**Excellent** : median of daily worst cases > 3 x requirement

**Good** : median of daily worst cases > requirement

**Adequate** : median of daily worst cases < requirement  
and  
median of daily medians > requirement

**Low** : median of daily medians < requirement.

**Bad** : median of daily medians < 1/3 of the requirement.

**Ratings Changes:**

Upgrades: ↑

LaTIS → Colo State: Good → **Excellent**

GSFC-DAAC → Wisconsin: Good → **Excellent**

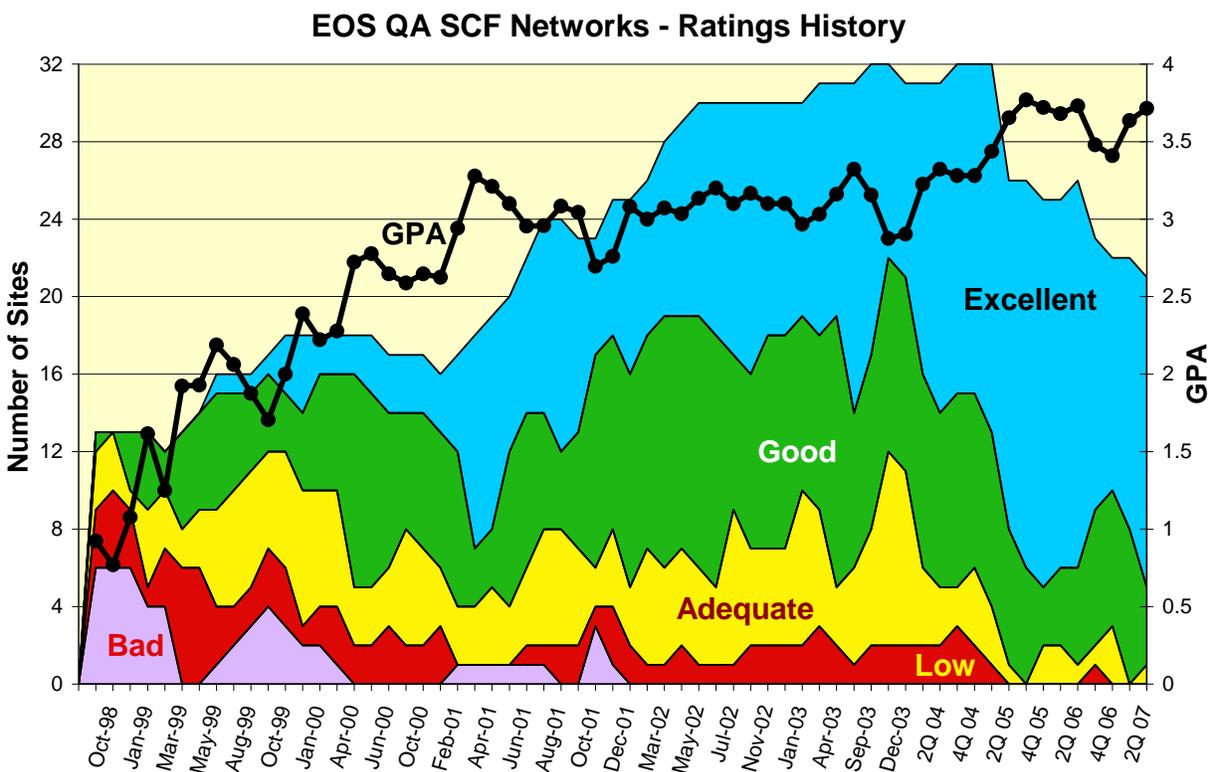
Downgrades: ↓ :

LaRC-DAAC → JRC: Good → **Adequate**

**Testing Down:** UIUC (since 9/06), Ohio State (since 3/07)

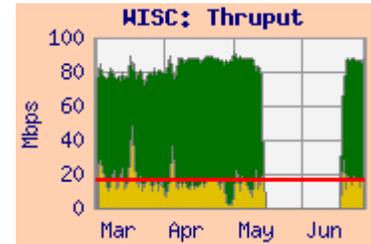
**Ratings History:**

The chart below shows the number of sites in each classification since the testing started in 1998. Note that these ratings do NOT relate to absolute performance -- they are relative to the EOS requirements. The GPA is calculated based on Excellent: 4, Good: 3, Adequate: 2, Low: 1, Bad: 0



Note that there are fewer sites included in this chart since 1Q'05 due to stopping of testing to Ohio State (3/07) and UIUC (4Q06), discontinuation of tests to NOAA and UMD (3Q06), discontinuation of tests to SAGE III Nodes (2Q06), and moving the reporting for SIPS sites to the "EOS Production sites" performance report (2Q05).

**Integrated Charts:** Integrated charts are now included for selected sites with the site details. These charts are “Area” charts, with a pink background. A sample Integrated chart is shown here. The yellow area at the bottom represents the daily average of the user flow from the source facility (e.g., GSFC, in this example) to the destination facility (e.g., Wisconsin, in this example) obtained from routers via “netflow”. The green area is stacked on top of the user flow, and represents the “adjusted” daily average iperf thruput between the source-destination pair most closely corresponding to the requirement. This iperf measurement essentially shows the circuit capacity remaining with the user flows active. The adjustments are made to compensate for various systematic effects, and are best considered as an approximation. The red line is the requirement for the flow from the source to destination facilities. Note that during the gap in thruput measurements (from mid May to mid June, in this example) no user flow measurements are recorded either.



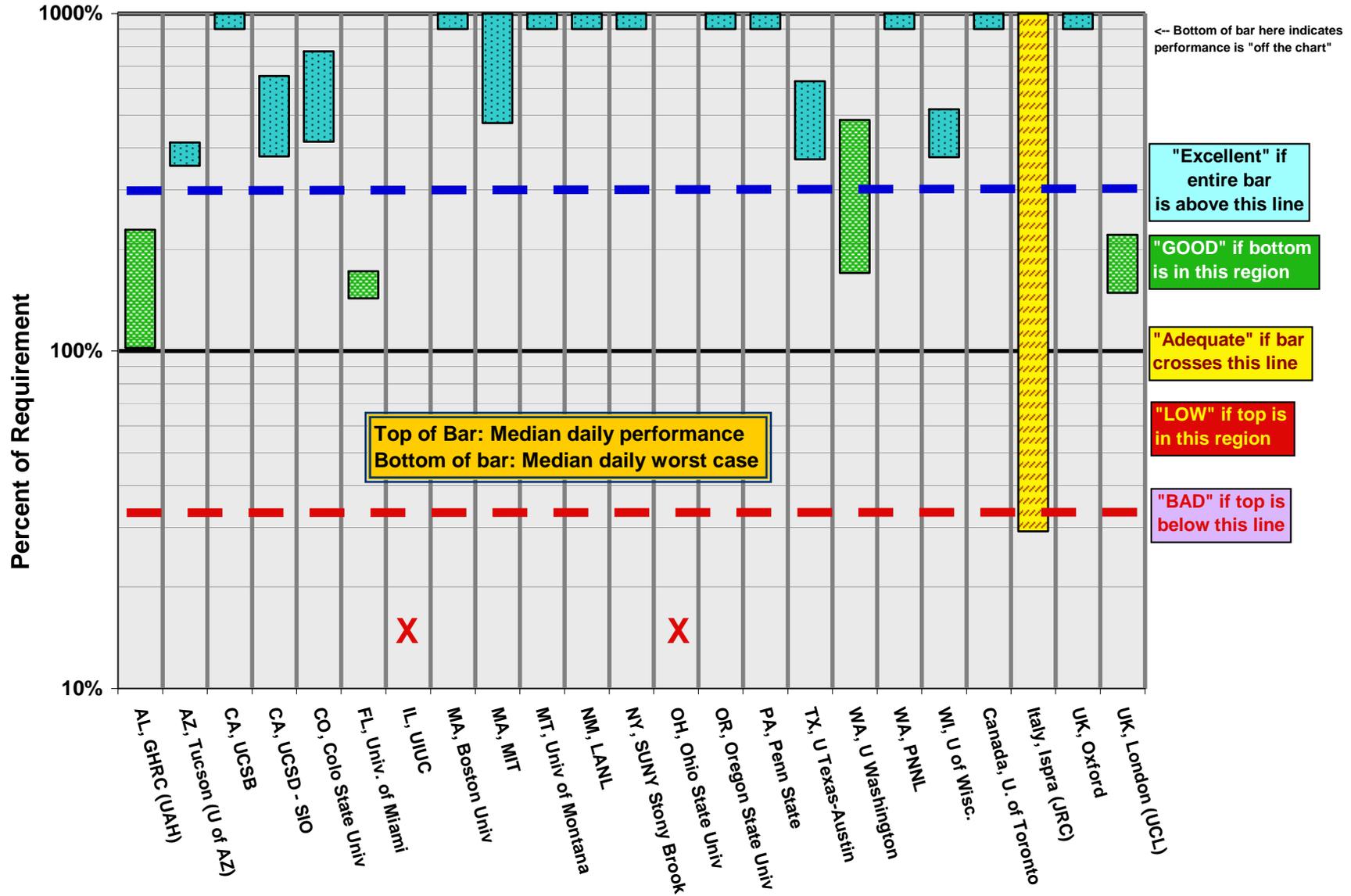
**Note:** User flow data is not available from LaRC, so sites with requirements from LaRC will not include integrated graphs.

### EOS QA SCF Sites: Network Requirements vs. Measured Performance

2 <sup>nd</sup> Quarter 2007		Testing							
Destination	Team (s)	Requirement	Source Node	Median mbps	Median Daily Worst	Average User Flow	Rating re Current Requirements		Route Tested
		Jan-07					2 Q 2007	1Q07	
AL, GHRC (UAH)	CERES, AMSR-E	7.0	LaTIS	16.1	7.2		GOOD	G	Internet2 via NISN / MAX
AZ, Tucson (U of AZ)	MODIS	2.6	EROS LPDAAC	11.7	9.9	0.02	Excellent	E	Internet2 via Chicago
CA, UCSB	MODIS	3.1	GSFC-MODIS	64.9	16.0	0.35	Excellent	E	Internet2 via MAX
CA, UCSD - SIO	ICESAT, CERES	7.1	GSFC-ICESAT	46.4	26.8		Excellent	E	Internet2 via NISN / MAX
CO, Colo State Univ	CERES	2.1	LaTIS	16.6	9.0		Excellent	G	Internet2 via NISN / MAX
FL, Univ. of Miami	MODIS, MISR	18.8	GDAAC	32.5	27.0	20.9	GOOD	G	Internet2 via MAX
IL, UIUC	MISR	1.1	LaRC DAAC	n/a	n/a		n/a	n/a	Internet2 via NISN / MAX
MA, Boston Univ	MODIS, MISR	3.0	EROS LPDAAC	90.3	62.3	1.0	Excellent	E	Internet2 via Chicago
MA, MIT	ICESAT	7.0	GSFC-ICESAT	73.4	33.2		Excellent	E	Internet2 via NISN / MAX
MT, Univ of Montana	MODIS	0.8	EROS LPDAAC	25.6	22.1	0.3	Excellent	E	Internet2 via Chicago
NM, LANL	MISR	1.0	LaRC DAAC	43.9	30.2		Excellent	E	NISN -> ESNet via CA
NY, SUNY Stony Brook	CERES	0.6	LaTIS	43.3	24.1		Excellent	E	Internet2 via NISN / MAX
OH, Ohio State Univ	ICESAT	6.3	GSFC-ICESAT	n/a	n/a		n/a	G	Internet2 via NISN / MAX
OR, Oregon State Univ	CERES, MODIS	7.6	LaTIS	138.2	86.1		Excellent	E	Internet2 via NISN / MAX
PA, Penn State	MISR	2.6	LaRC DAAC	179.6	117.6		Excellent	E	Internet2 via NISN / MAX
TX, U Texas-Austin	ICESAT	11.1	GSFC-ICESAT	69.7	40.9		Excellent	E	Internet2 via NISN / MAX
WA, U Washington	ICESAT	11.7	GSFC-ICESAT	56.9	20.0		GOOD	G	Internet2 via NISN / MAX
WA, PNNL	MISR	1.4	LaRC PTH	91.0	91.0		Excellent	E	NISN -> ESNet via CA
WI, U of Wisc.	MODIS, CERES, AIRS	16.5	GDAAC	85.8	61.8	14.5	Excellent	G	Internet2 via MAX
Canada, U. of Toronto	MOPITT	0.6	LaRC DAAC	18.3	9.2		Excellent	E	NISN-CA*net4
Italy, Ispra (JRC)	MISR	0.5	LaRC DAAC	5.6	0.2		Adequate	G	NISN-UUNET-Milan
UK, Oxford	HIRDLS	0.5	GSFC-ENPL	29.5	26.9	0.1	Excellent	E	Internet2->Geant (DC) -> JAnet
UK, London (UCL)	MISR, MODIS	1.0	LaRC DAAC	2.3	1.5		GOOD	G	NISN - MAX - Internet2->Geant (DC) -> JAnet
	<b>*Rating Criteria:</b>						<b>Rating</b>	<b>Current Jan-07</b>	<b>Last Report</b>
	Excellent	Median Daily Worst >= 3 *Requirement					Excellent	16	14
	GOOD	Median Daily Worst >= Requirement					GOOD	4	8
	Adequate	Median Daily Worst < Requirement <= Median Daily Median					Adequate	1	0
	LOW	Median Daily Median < Requirement					LOW	0	0
	BAD	Median Daily Median < Requirement / 3					BAD	0	0
							<b>Total</b>	<b>21</b>	<b>22</b>
							<b>GPA</b>	<b>3.71</b>	<b>3.64</b>

## EOS QA SCF Sites

### Daily Median and Worst Performance as a percent of Requirements



## Details on individual sites:

Each site listed below is the DESTINATION for all the results reported in that section. The first test listed is the one on which the rating is based -- it is from the source most relevant to the driving requirement. Other tests are also listed. The three values listed are derived from [nominally] 24 tests per day. For each day, a daily best, worst, and median is obtained. The values shown below are the medians of those values over the test period.

### 1) AL, GHRC (UAH) (aka NSSTC)

Teams: CERES, AMSR

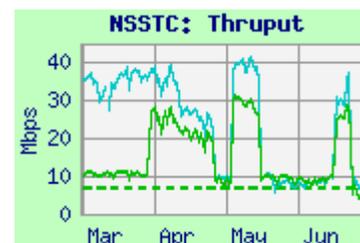
Web Page: <http://ensight.eos.nasa.gov/Missions/terra/NSSTC.shtml>

Rating: Continued **Good**

Domain: nsstc.uah.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC LaTIS	22.6	16.1	7.2	Internet2 via NISN
GSFC-CNE	26.6	17.3	7.6	Internet2 via MAX



Requirements:

Source Node	Date	Mbps	Rating
LaRC LaTIS	'06 – '07	7.0	<b>Good</b>

**Comments:** Performance from LaRC improved in late March, due to the NISN fixing its peering with Internet2 back to MAX, but then other routing changes occurred since then; the rating remains "Good". Thruput from GSFC was also affected by these route changes.

Note: Testing between NSSTC and NSIDC for AMSR-E (AQUA) is now included in the "Production Sites" report.

### 2) AZ, Tucson (U of AZ):

Teams: MODIS

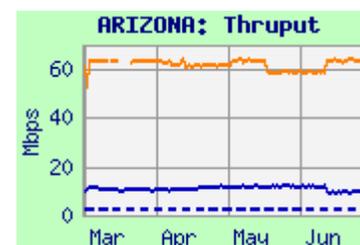
Web Page: <http://ensight.eos.nasa.gov/Missions/terra/ARIZONA.shtml>

Rating: Continued **Excellent**

Domain: arizona.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
EROS LPDAAC	12.9	11.7	9.9	Internet2 via Chicago
GSFC	63.2	61.7	57.4	Internet2 via MAX

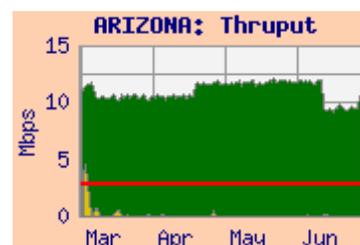


Requirements:

Source Node	FY	Mbps	Rating
EROS LPDAAC	'03 - '07	2.8	<b>Excellent</b>

**Comments:** The ratings are based on the MODIS flow from EROS – performance was stable this quarter from EROS, rating "Excellent". Performance was also stable from GSFC.

The average user flow from EROS was only approximately 20 kbps – less than 1% of the stated requirement.



**3) CA, UCSB :**

Teams: MODIS

Domain: ucsb.edu

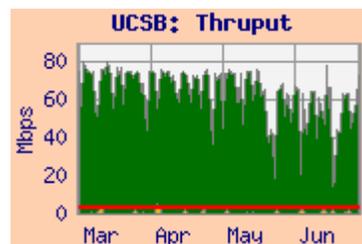
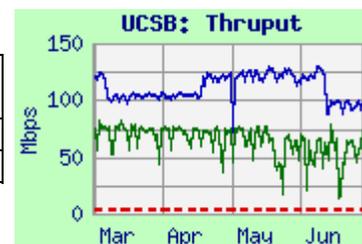
Web page: <http://ensight.eos.nasa.gov/Missions/terra/UCSB.shtml>Ratings: GSFC: Continued **Excellent**  
EROS: Continued **Excellent****Test Results:**

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-MODIS	87.2	64.9	16.0	Internet2 via MAX
EROS-LPDAAC	125.9	117.1	88.9	Internet2 via Chicago

**Requirements:**

Source Node	FY	mbps	Rating
GSFC-DAAC	'04 - '07	3.1	<b>Excellent</b>
EROS-LPDAAC	'04 - '07	2.2	<b>Excellent</b>

**Comments:** The requirements are split between EROS and GSFC. Testing from GSFC was switched to MODIS in April, since most data to UCSB is from MODIS. While this is indeed the case, it is mostly sent from the DAAC, so testing from the DAAC was resumed in July. Performance from both GSFC and EROS has been mostly stable since April '05, with an increase from EROS in December '06. The rating remains "Excellent" from both sites. The new Integrated graph shows that the user flow from GSFC averages 350 kbps, and often peaks at approximately the level of the requirement.

**4) CA, UCSD (SIO):**

Teams: CERES, ICESAT

Domain: ucsd.edu

Web Page: <http://ensight.eos.nasa.gov/Missions/terra/UCSD.shtml>Ratings: ICESAT: Continued **Excellent**  
LaTIS: Continued **Excellent****Test Results:**

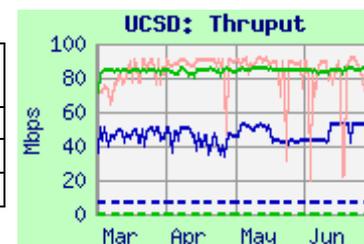
Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-ICESAT	47.9	46.4	26.8	Internet2 via NISN / MAX
LaTIS	86.7	84.7	80.5	Internet2 via NISN / ATL
GSFC-PTH	91.0	88.9	26.5	Internet2 via MAX

**Requirements:**

Source Node	FY	mbps	Rating
GSFC-ICESAT	'05 - '07	7.0	<b>Excellent</b>
LaTIS	'02 - '07	0.26	<b>Excellent</b>

**Comments:** The daily minimum from GSFC remains above 3 x the requirement keeping the rating "Excellent". Performance from GSFC-PTH is a bit better, however, although subject to the EBnet to Doors congestion.

Performance from LaTIS was similar to the previous period. The LaTIS rating continues as "Excellent".



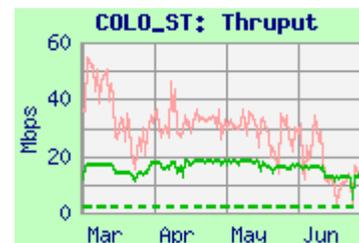
**5) CO, Colo State Univ.:**

Teams: CERES

Web page: [http://ensight.eos.nasa.gov/Missions/terra/COLO\\_ST.shtml](http://ensight.eos.nasa.gov/Missions/terra/COLO_ST.shtml)Rating: ↑ Good → **Excellent**  
Domain: colostate.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaTIS	17.5	16.6	9.0	Internet2 via NISN / ATL
GSFC	39.3	29.2	8.3	Internet2 via MAX



Requirements:

Source Node	FY	mbps	Rating
LaTIS	'04 - '07	2.15	<b>Excellent</b>

**Comments:** Performance from both sources **dropped off in mid June** (recovered in July), related to the [Internet2 reconfiguration – The Internet2 Denver node removed; replaced by one at Salt Lake City](#). Performance from both sources is noisy, but the daily worst from LaTIS improved to be above 3 x the requirement, so the rating improved to “Excellent”.

**6) FL, Univ. of Miami:**

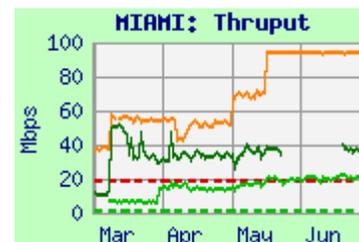
Teams: MODIS, MISR

Domain: rsmas.miami.edu

Web page: <http://ensight.eos.nasa.gov/Missions/terra/MIAMI.shtml>Rating: GSFC:Continued **Good**  
LaRC: Continued **Excellent**

Test Results:

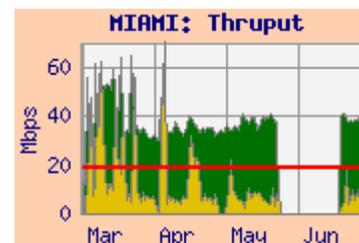
Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-MODIS	42.0	34.3	26.3	Internet2 via MAX
GSFC-ENPL	80.0	70.7	61.1	Internet2 via MAX
LaRC DAAC	22.5	17.6	12.0	Internet2 via NISN / ATL



Requirements:

Source Node	FY	mbps	Rating
GSFC	'04 - '07	18.8	<b>Good</b>
LaRC DAAC	'04 - '07	1.1	<b>Excellent</b>

**Comments:** Thruput from GSFC-MODIS was mostly stable, but improved from GSFC-ENPL with retuning. Thruput from LaRC improved in March after dropping about 40% due to NISN routing via SFO. The rating remains “Good” from GSFC, and “Excellent” from LaRC, due to the much lower requirement.



The integrated graph shows that user flow from GSFC averaged about 8.1 mbps for this period, close to 50% of the requirement.

**Note:** Thruput was about 133 mbps from GSFC and 38 mbps from LaRC until Aug '05; an increase in packet loss was observed at the same time. Since this loss is observed from all sources, the problem appears to be in or near Miami.

**7) IL, UIUC:**

Teams: MISR

Web Page: <http://ensight.eos.nasa.gov/Missions/terra/UIUC.shtml>

Test Results: None

Requirements:

Source Node	FY	mbps	Rating
LaRC DAAC	'04 - '06	1.13	n/a

**Comments:** The UIUC test host has been down since September '06, so testing has been temporarily discontinued. The POC reports the test host may be restored in the future.

Rating: n/a  
Domain: uiuc.edu**8) MA, Boston Univ:**

Teams: MODIS, MISR

Domain: bu.edu

Web Page: <http://ensight.eos.nasa.gov/Missions/terra/BU.shtml>

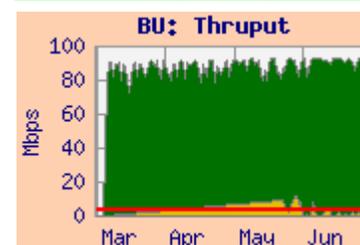
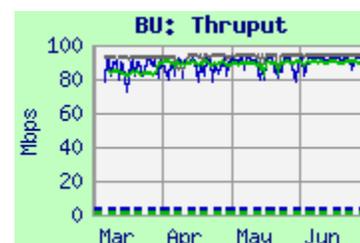
Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
EROS DAAC	92.8	90.3	62.3	Internet2 via Chicago
GSFC ENPL	93.8	93.8	72.2	Internet2 via MAX
LaRC DAAC	91.9	89.7	77.8	Internet2 via NISN / ATL

Requirements:

Source Node	FY	mbps	Rating
EROS DAAC	'04 - '07	3.0	Excellent
LaRC DAAC	'04 - '07	1.2	Excellent

**Comments:** Performance from all sources was very stable this period. LaRC performance improved as the NISN routing via SFO was fixed. The user flow from EROS averaged about 1.0 mbps for this period (33% of the requirement). The rating from both sources remains "Excellent".

Ratings: EROS: Continued **Excellent**  
LaRC: Continued **Excellent****9) MA, MIT:**

Teams: ICESAT

Web Page: <http://ensight.eos.nasa.gov/Missions/icesat/MIT.shtml>

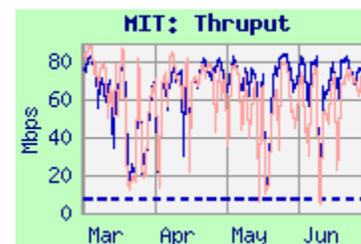
Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-ICESAT	86.7	73.4	33.2	Internet2 via NISN / MAX
GSFC-PTH	86.6	67.7	21.7	Internet2 via MAX

Requirements:

Source Node	FY	mbps	Rating
GSFC	'05 - '07	7.0	Excellent

**Comments:** Performance from GSFC ICESAT to MIT is still subject to diurnal congestion inside GSFC, a bit less than previously (Best:worst ratio is now below 3:1 from ICESAT). The median daily worst is now comfortably above 3 x the requirement; the rating remains "Excellent". From GSFC-PTH the peak performance is similar, but the median and worst are lower, due to the EBnet to Doors congestion.

Rating: Continued **Excellent**  
Domain: mit.edu

**10) MT, Univ of Montana:**

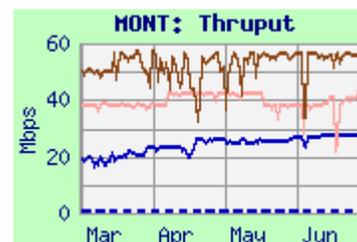
Teams: MODIS

Web Page: <http://ensight.eos.nasa.gov/Missions/terra/MONT.shtml>Rating: Continued **Excellent**

Domain: ntsg.umt.edu

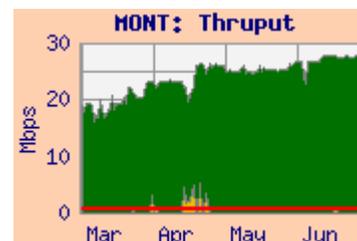
Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
EROS LPDAAC	26.5	25.6	22.1	Chicago / Internet2
GSFC	41.0	40.8	26.9	MAX / Internet2
NSIDC	56.7	55.2	36.8	CU / FRGP / Internet2



Requirements:

Source Node	FY	mbps	Rating
EROS LPDAAC	'04 - '07	0.82	<b>Excellent</b>



**Comments:** Performance was very stable this period -- the diurnal cycle is much weaker now (Daily Max:Min ratio from EROS is now only 1.2:1 – was about 9:1 until late November). There must have been an upgrade in Montana! With the very low requirement, the rating remains “Excellent”. The new integrated graph shows the daily average user flow from EROS peaking at about 5 mbps, with a long term average of 300 kbps – 37% of the requirement.

**11) NM, LANL:**

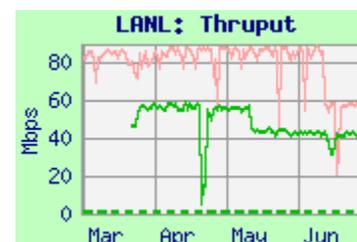
Teams: MISR

Web Page: <http://ensight.eos.nasa.gov/Missions/terra/LANL.shtml>Rating: Continued **Excellent**

Domain: lanl.gov

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	49.1	43.9	30.2	NISN SIP / Chi / ESnet
GSFC-PTH	78.8	64.5	36.5	MAX / ESnet



Requirements:

Source Node	FY	mbps	Rating
LaRC DAAC	'03-'07	1.03	<b>Excellent</b>

**Comments:** Performance from LaRC was basically stable this period, dropping a bit after NISN rerouted their ESnet peering to Chicago. With the low requirement, the rating remains "Excellent". Performance from GSFC dropped this period, also due to increased RTT due to ESnet internal routing changes

**12) NY, SUNY-SB:**

Teams: CERES, MODIS

Web Page: <http://ensight.eos.nasa.gov/Missions/terra/SUNYSB.shtml>Rating: Continued **Excellent**

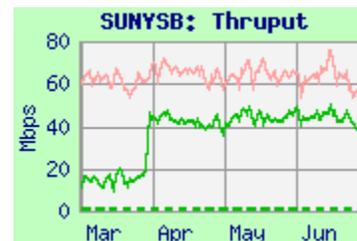
Domain: sunysb.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaTIS	57.2	43.3	24.1	NISN / NYSErnet
GSFC	78.8	64.5	36.5	MAX / Internet2 / NYSErnet

Requirements:

Source Node	FY	mbps	Rating
LaTIS	'02-'07	0.57	<b>Excellent</b>



**Comments:** Performance from LaTIS improved at the end of March due to NISN fixing the routing to NYSErnet (was through Internet2 via SFO). Due to the very low requirement, the rating remains "Excellent". Performance from GSFC was stable this period.

**13) OH, Ohio State Univ:**

Teams: ICESAT

Web Page: [http://ensight.eos.nasa.gov/Missions/icesat/OHIO\\_STATE.shtml](http://ensight.eos.nasa.gov/Missions/icesat/OHIO_STATE.shtml)

Rating: n/a

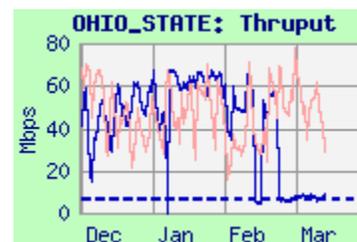
Domain: ohio-state.edu

Test Results: None

Requirements:

Source Node	FY	mbps	Rating
GSFC	'05-'07	6.3	<b>Good</b>

**Comments:** The Ohio State test host has been down since March '07, so testing has been temporarily discontinued. The POC reports the test host may be restored in the future.

**14) OR, Oregon State Univ:**

Teams: CERES, MODIS

Domain: oce.orst.edu

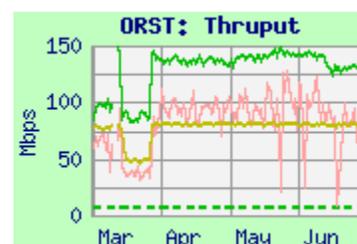
Web Page: <http://ensight.eos.nasa.gov/Missions/terra/ORST.shtml>Ratings: LaTIS: Continued **Excellent**GSFC: Continued **Excellent**

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaTIS	148.7	138.2	86.1	Internet2 via NISN / ATL
JPL	83.6	80.6	73.7	Internet2 via CalRen
GSFC-PTH	147.3	93.1	20.5	Internet2 via MAX

Requirements:

Source Node	FY	mbps	Rating
LaTIS	'04 - '07	7.5	<b>Excellent</b>
GDAAC	'02 - '07	0.25	<b>Excellent</b>



**Comments:** Performance from all sources stabilized in late March from all sources – since all sources changed in sync, it seems likely that the cause of the changes must be near ORST. Thruput from GSFC is noisy due to EBnet to Doors congestion. Thruput from JPL is limited by the Fast-E interface on the test node. The ratings from both LaTIS and GSFC remain "Excellent".

**15) PA: Penn State Univ:**

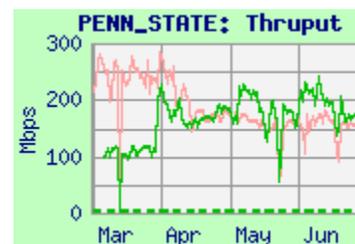
Team: MISR

Web Page: [http://ensight.eos.nasa.gov/Missions/terra/PENN\\_STATE.shtml](http://ensight.eos.nasa.gov/Missions/terra/PENN_STATE.shtml)Rating: Continued **Excellent**

Domain: psu.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	231.4	179.6	117.6	Internet2 via NISN / MAX
GSFC-PTH	202.6	162.4	105.8	Internet2 via MAX



Requirements:

Source Node	FY	mbps	Rating
LaRC DAAC	'03-'06	2.6	<b>Excellent</b>

**Comments:** Performance from LaRC improved at the end of March when the NISN routing (formerly via SFO) was fixed. The EBnet-Doors congestion at GSFC became a factor in October '06 – thruput from GSFC averaged about 300 mbps before that. The rating remains “Excellent”.

**16) TX: Univ. of Texas - Austin:**

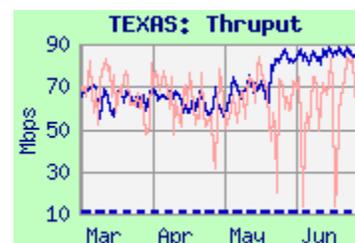
Team: ICESAT

Web Page: <http://ensight.eos.nasa.gov/Missions/icesat/TEXAS.shtml>Rating: Continued **Excellent**

Domain: utexas.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-ICESAT	80.9	69.7	40.9	Internet2 via NISN / MAX
GSFC-PTH	87.2	64.1	16.5	Internet2 via MAX



Requirements:

Source Node	FY	mbps	Rating
GSFC-ICESAT	05-'07	11.1	<b>Excellent</b>

**Comments:** Diurnal congestion near ICESAT was reduced in January, and the daily worst thruput remains above 3 x the requirement; the rating remains “Excellent”. There is now more congestion from GSFC-PTH – on the EBnet to Doors GigE.

**17) WA, Univ Washington:**

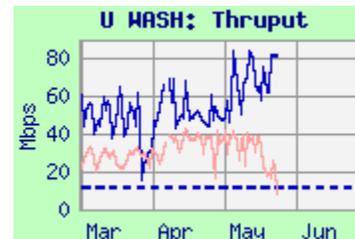
Team: ICESAT

Web Page: <http://ensight.eos.nasa.gov/Missions/icesat/UW.shtml>Rating: Continued **Good**

Domain: washington.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-ICESAT	84.8	56.9	20.0	Internet2 via NISN/MAX
GSFC-PTH	43.3	36.1	9.2	Internet2 via MAX



Requirements:

Source Node	FY	mbps	Rating
GSFC-ICESAT	'05-'07	11.7	<b>Good</b>

**Comments:** Like other ICESAT sites, diurnal congestion from the ICESAT test node was substantially reduced in January. The daily worst from ICESAT is above the requirement; so the rating remains “Good”. Testing was stopped in May on request from the UW sysadmin.

**18) WA, PNNL:**

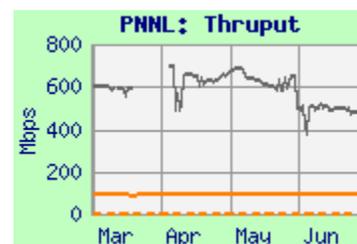
Team: MISR

Web Page: <http://ensight.eos.nasa.gov/Missions/terra/PNNL.shtml>Ratings: LaRC: Continued **Excellent**

Domain: pnl.gov

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC-PTH	91.0	91.0	91.0	NISN / Chi / ESnet
GSFC-ENPL	664.8	611.1	483.7	MAX / ESnet



Requirements:

Source Node	FY	mbps	Rating
LaRC	'04-'07	1.4	<b>Excellent</b>

**Comments:** Performance from LaRC PTH stabilized in January, improving the daily worst from only 8.3 mbps previously; the rating remains "Excellent". Performance from GSFC-ENPL is **OUTSTANDING!**

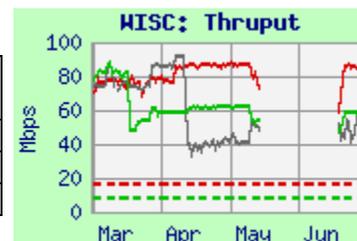
**19) WI, Univ. of Wisconsin:**

Teams: MODIS, CERES, AIRS Domain: ssec.wisc.edu

Web Page: <http://ensight.eos.nasa.gov/Missions/terra/WISC.shtml>Ratings: GSFC: ↑ Good → **Excellent**LARC: Continued **Excellent**

Test Results:

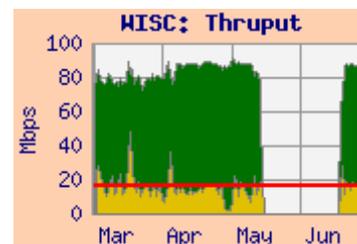
Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-DAAC	89.2	85.8	61.8	MAX / Internet2 / Chi / MREN
LaTIS	62.8	60.1	47.2	NISN / Chicago / MREN
GSFC-ENPL	75.8	42.1	26.6	MAX / Internet2 / Chi / MREN



Requirements:

Source Node	FY	mbps	Rating
GSFC	'04 - '07	16.5	<b>Excellent</b>
LaRC Combined	'05-'07	7.9	<b>Excellent</b>

**Comments:** Performance from GDAAC was more stable this month – the daily worst was above 3 x the requirement, improving the rating to "Excellent". Thruput from LaTIS was stable this period; the rating from LaTIS also remains "Excellent". The integrated graph shows that the average user flow from GSFC was about 14.5 mbps – very close to the requirement!

**20) Canada, Univ of Toronto:**

Team: MOPITT

Web Page: <http://ensight.eos.nasa.gov/Missions/terra/TORONTO.shtml>Rating: Continued **Excellent**

Domain: utoronto.ca

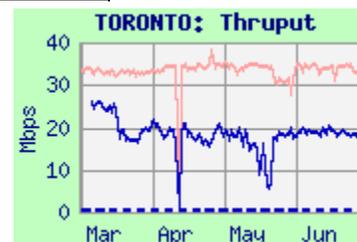
Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	22.8	18.3	9.2	NISN / Chicago / CA*net4
GSFC-PTH	36.7	34.2	29.6	MAX / Internet2 / Chicago / CA*net4

Requirements:

Source Node	FY	kbps	Rating
LaRC DAAC	'02 - '07	100	<b>Excellent</b>
GSFC EOC	'02 - '07	512	<b>Excellent</b>

**Comments:** Performance from both sources have been mostly stable since December. The ratings from both sources remain "Excellent".



**21) Italy, EC - JRC:**

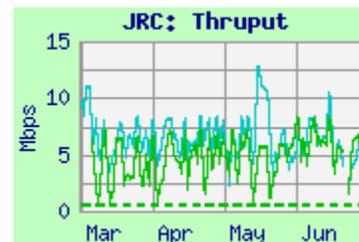
Team: MISR

Web Page: <http://ensight.eos.nasa.gov/Missions/terra/JRC.shtml>Rating: ↓ Good → **Adequate**

Domain: jrc.it

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	7.2	5.6	0.2	NISN / UUnet / Milan
GSFC-NISN	8.4	6.1	1.2	NISN / UUnet / Milan



Requirements:

Source Node	FY	mbps	Rating
LaRC DAAC	'02 – '07	0.52	<b>Adequate</b>

**Comments:** Performance was noisy, apparently due to congestion on UUnet, but similar to previous periods from both sources. The daily median from LaRC remains well above the requirement, but the median daily worst is now below the requirement, so the rating drops to "Adequate".

**22) UK, London: (UCL)**

Teams: MODIS, MISR

Web Page: <http://ensight.eos.nasa.gov/Missions/terra/UCLSCF.shtml>Rating: Continued **Good**

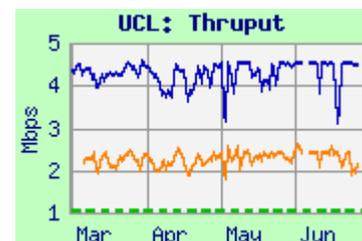
Domain: ucl.ac.uk

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	2.6	2.3	1.5	NISN / SFO / Sprintlink / JAnet
GSFC PTH	4.5	4.4	3.2	MAX / Internet2 / NY / Geant / JAnet

Requirements

Source Node	FY	mbps	Rating
LaRC DAAC	'02 – '06	1.03	<b>Good</b>



**Comments:** In September '06 the testing was modified due to a new firewall at UCL – now using ftp pulls by UCL instead of iperf from GSFC and LaRC. Results are much lower using this method – previous iperf thrupt was 9.5 mbps from LaRC and 32 mbps from GSFC. The route from LaRC is via NISN, peering with Sprintlink on the west coast, unnecessarily increasing RTT and reducing thrupt. Although stable, thrupt from LaRC is below 3 x the requirement, so the rating remains "Good".

**23) UK, Oxford:**

Team: HIRDLS

Web Page: <http://ensight.eos.nasa.gov/Missions/aura/OXFORD.shtml>

Rating: Continued **Excellent**

Domain: ox.ac.uk

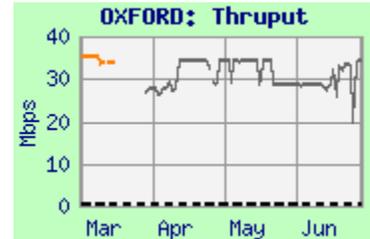
Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-ENPL	33.9	29.5	26.9	MAX / Internet2 / NY / GEANT / JAnet

Requirements: (IST Only)

Source Node	FY	kbps	Rating
GSFC	'03 – '07	512	<b>Excellent</b>

**Comments:** Performance has been stable since it improved in September '06 when an Ethernet duplex mismatch at Oxford was corrected, and improved further with retuning in October '06. The rating remains "Excellent".



**23A) Rutherford Appleton Laboratory**

Team: HIRDLS

Web Page: [http://ensight.eos.nasa.gov/Missions/aura/UK\\_RAL.shtml](http://ensight.eos.nasa.gov/Missions/aura/UK_RAL.shtml)

Rating: n/a

Domain: rl.ac.uk

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-ENPL	34.8	31.1	21.4	MAX / Internet2 / NY / GEANT / JAnet

**Comments:** Thruput to RAL became less noisy after the problems (from mid-November until early January) were fixed. There is no stated requirement to RAL, so there is no rating.

