

How to improve station disturbances detection and warning ?

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IDS workshop, Nice, FRANCE, Nov 12-14, 2008



Status of SSALTO report to IDS about system events

-Satellite/Instrument disturbance (DORIS Report from CNES/POD, System Events from SSALTO)

- Missing data
- Particular events : maneuver, incident

Example for Satellite: Envisat

Cycle: 326 arc 1 cycle 72

09 September 08 to 15 September 08

Events : Out-Of_Plane Maneuver on September, 09, 4H34

In Plane Maneuver on September, 10, 2H41

Missing data: No Doris Data from September,11 , 18:59 to September,12 01:13

-Station disturbance (not systematically)

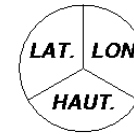
- Missing data
- Corrupted data due to
 - antenna displacement
 - equipment malfunctioning including beacon, connecting cables, antenna

Detection of station disturbance in SSALTO (to be discussed)

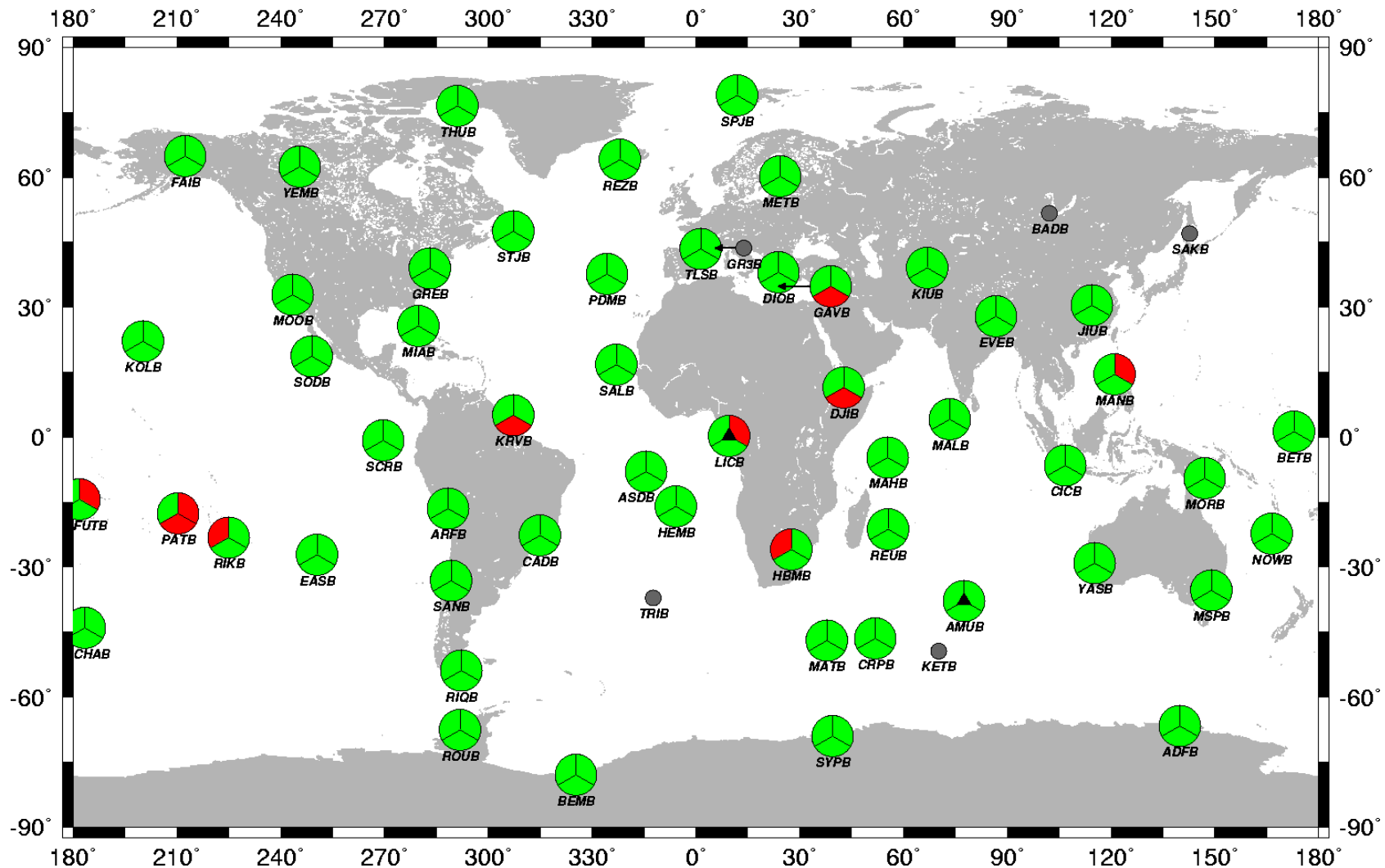
Routine analysis of SSALTO coordinate solution (3-4 days delay, multi-satellite, preliminary orbit) (2cm to 5cm accuracy)	To be done
Routine analysis of station "house-keeping" (HK) parameters	done
Weekly report to SSALTO-ops coordination (GECO meeting)	Done partially for HK parameters
if disturbance detected, - verification with POD data editing, - report to IDS by mail (DORISMail ?, DORIS Report ?) and IDS central Bureau web site for archiving, before data dissemination	To be done

Localisation SSALTO

écart à ITRF2005 du 20/10/2008 au 26/10/2008



- pas de données
- ▲ passages validés < 70 %
- nombre de passages validés < 8



Detection of Station disturbances criteria (to be discussed)

Applicable only to CDDIS 2.x data, not to RINEX data

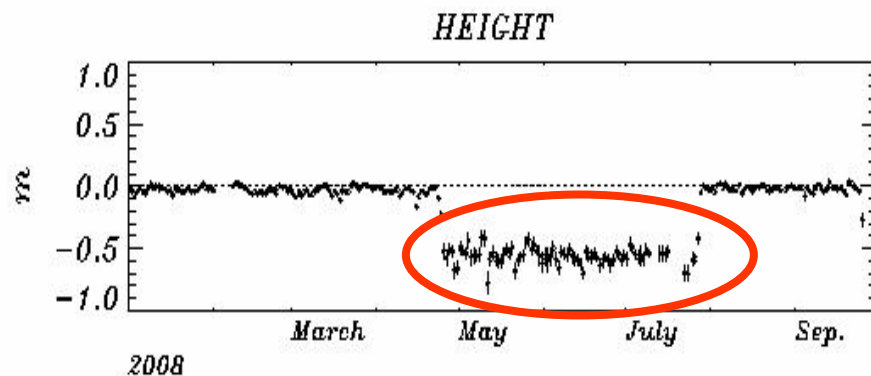
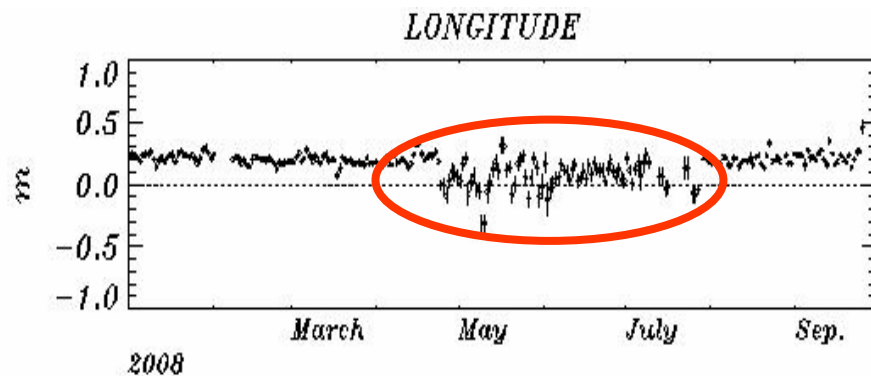
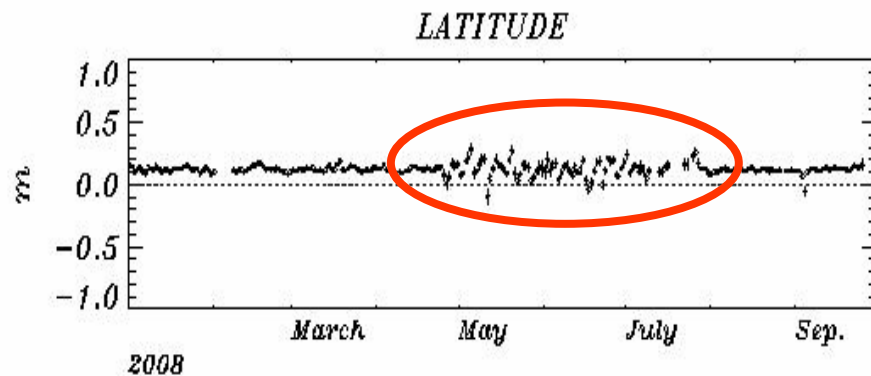
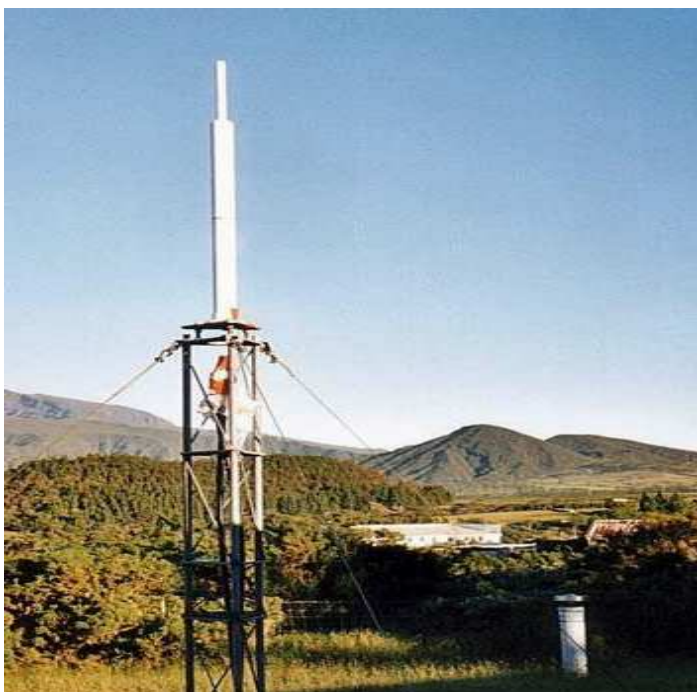
- Missing data : period > 1 month duration (TBC)
- Corrupted data : increase of measurement residuals, station breaks, ...

Since early 2006, with these criteria,
70 disturbances are detected, concerning 39 stations.
13 disturbances are « corrupted data », most of them is due to
connection problems or antenna shift

La Réunion

Connection problems between beacon and antenna

from april to july 08

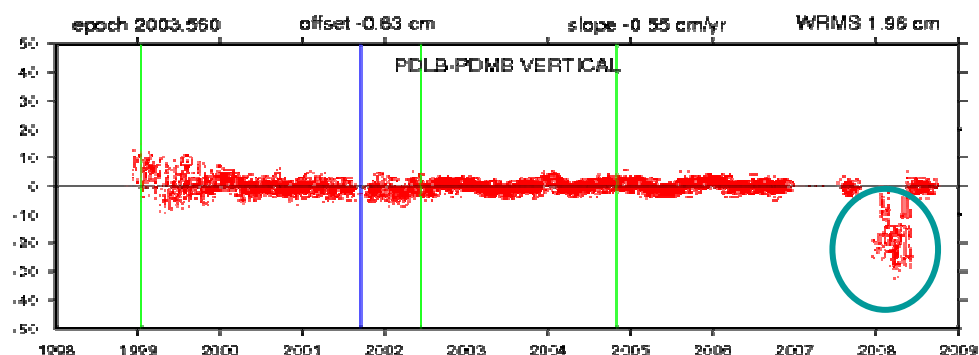
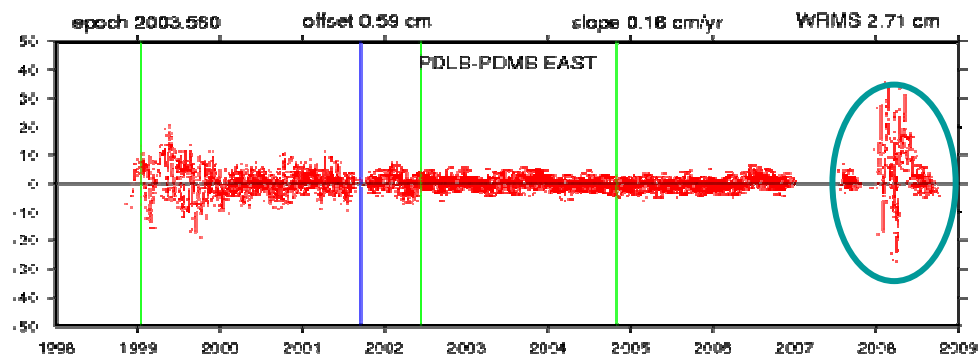
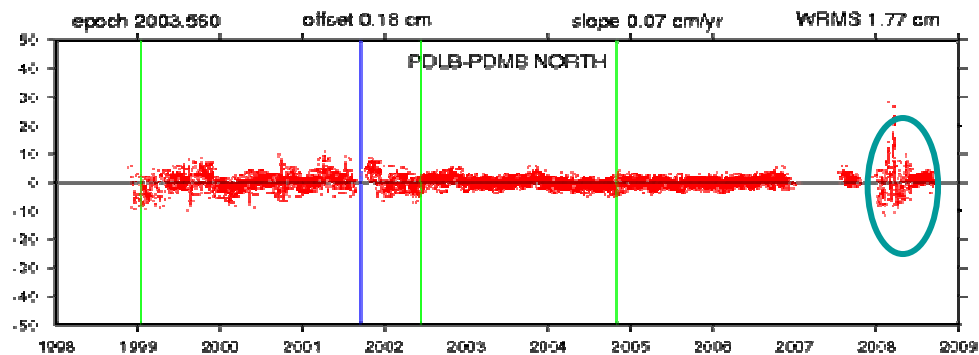


(from SSALTO weekly solutions)

Ponta Delgada

Connection problems between beacon and antenna

from january to june 08



(from IGN/JPL weekly solutions)

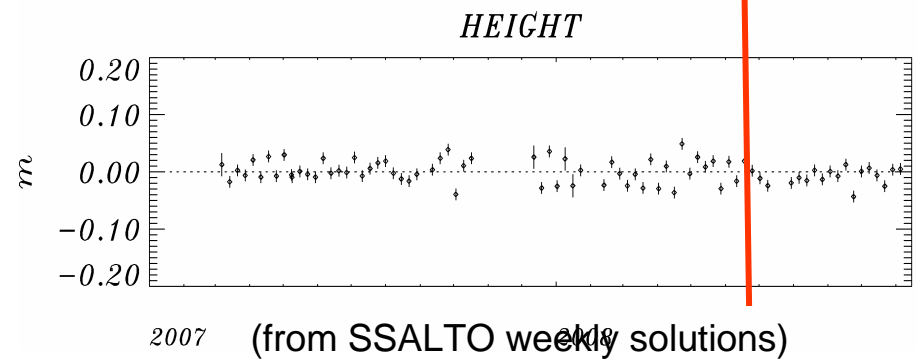
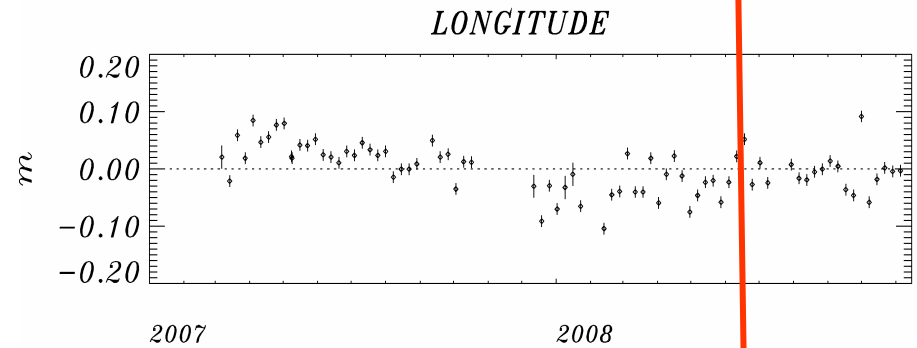
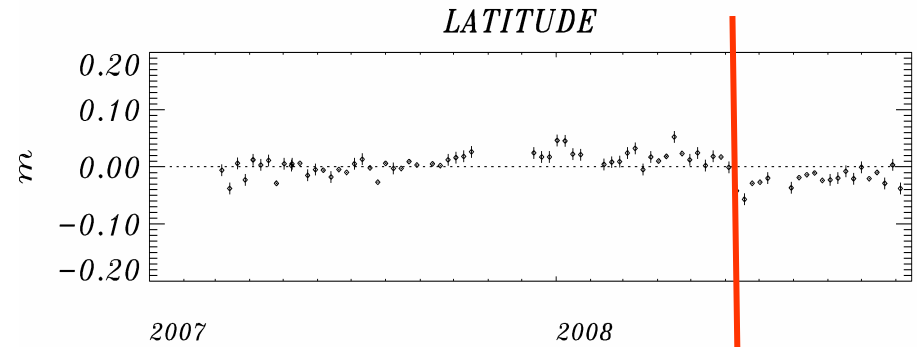
Ascension

Antenna tilt reported in January 2007
(2 or 3 cm displacement)



Rikitea

Car bump on the lower section of the lattice tower, on 04 June 08



Example of “corrupted data” report (to be discussed)

Author: Pascale Ferrage

Subject: Station disturbance for Ponta Delgada

Dear colleagues,

Station : Ponta Delgada (PDMB)

Missing data :

Corrupted data : from 5 January 08 to 7 June 08

Best Regards,

Station disturbance history on IDS Bureau Central web site (to be discussed)

Location	SiteLog	Domes Nr	DORIS Mail	date	Information provided	Data Format
Ascension	ASDB	30602S004		-		
Ascension	ASDB	30602S004		08.01.07	Corrupted data Start (2 or 3 cm antenna tilt)	CDDIS 2.x
Ascension	ASDB	30602S004		27.04.05*	Lack of data End	
Ascension	ASDB	30602S004		12.01.05*	Lack of data Start	CDDIS 2.x
Amsterdam	AMTB	91401S003		04.12.05*	Lack of data End	
Amsterdam	AMTB	91401S003		08.09.05*	Lack of data Start	CDDIS 2.x
Ponta Delgada	PDMB	31906S002		07.06.08*	Corrupted data End	
Ponta Delgada	PDMB	31906S002		05.01.08*	Corrupted data Start (antenna problem)	CDDIS 2.x
Ponta Delgada	PDMB	31906S002		05.01.08*	Lack of data End	
Ponta Delgada	PDMB	31906S002		05.10.07*	Lack of data Start	CDDIS 2.x
Ponta Delgada	PDMB	31906S002		02.08.07*	Corrupted data End	
Ponta Delgada	PDMB	31906S002		03.04.07*	Corrupted data Start (connection problem)	CDDIS 2.x
Ponta Delgada	PDMB	31906S002		03.04.07*	Lack of data End	
Ponta Delgada	PDMB	31906S002		17.12.06*	Lack of data Start	CDDIS 2.x

* Dates with an asterisk indicate exact date of the event, otherwise it is the date of the report email

Backup slides

Location	SiteLog	Domes Nr	DORISM ail	date	Information provided	Data Format
Ascension	ASDB	30602S004		-		
Ascension	ASDB	30602S004		08.01.07	Corrupted data Start (antenna tilt)	CDDIS 2.x
Ascension	ASDB	30602S004		27.04.05*	Lack of data End	
Ascension	ASDB	30602S004		12.01.05*	Lack of data Start	CDDIS 2.x
Amsterdam	AMTB	91401S003		04.12.05*	Lack of data End	
Amsterdam	AMTB	91401S003		08.09.05*	Lack of data Start	CDDIS 2.x
Belgrano	BEMB	66018S002		18.02.07*	Lack of data End	
Belgrano	BEMB	66018S002		31.07.06*	Lack of data Start	CDDIS 2.x
Betio/Kiribati	BETB	50305S001		22.05.08*	Lack of data End	
Betio/Kiribati	BETB	50305S001		08.03.08*	Lack of data Start	CDDIS 2.x
Cachoeira P.	CADB	41609S002		23.07.06*	Lack of data End	
Cachoeira P.	CADB	41609S002		05.06.06*	Lack of data Start	CDDIS 2.x
Chatham	CHAB	50207S002		11.02.07*	Lack of data End	
Chatham	CHAB	50207S002		07.12.06*	Lack of data Start	CDDIS 2.x
Chatham	CHAB	50207S002		07.12.06*	Corrupted data End	
Chatham	CHAB	50207S002		05.08.06*	Corrupted data Start (antenna problem)	CDDIS 2.x
Chatham	CHAB	50207S002		01.11.05*	Lack of data End	
Chatham	CHAB	50207S002		11.03.05*	Lack of data Start	CDDIS 2.x
Chatham	CHAB	50207S002		11.03.05*	Corrupted data End	
Chatham	CHAB	50207S002		06.02.05*	Corrupted data Start (beacon problem)	CDDIS 2.x

* Dates with an asterisk indicate exact date of the event, otherwise it is the date of the report email

Cibinong	CICB	23101S002		05.06.06*	Lack of data End	CDDIS 2.x
Cibinong	CICB	23101S002		14.02.06*	Lack of data Start	
Dionysos	DIOA	12602S011		10.11.05*	Lack of data End	
Dionysos	DIOA	12602S011		30.09.05*	Lack of data Start	CDDIS 2.x
Djibouti	DJIB	39901S003		27.06.06*	Lack of data End	
Djibouti	DJIB	39901S003		24.11.05*	Lack of data Start	CDDIS 2.x
Easter Island	EASB	41703S009		09.03.07*	Lack of data End	
Easter Island	EASB	41703S009		26.09.06*	Lack of data Start	CDDIS 2.x
Everest	EVEB	21501S001		23.09.08*	Lack of data End	
Everest	EVEB	21501S001		30.07.08*	Lack of data Start	CDDIS 2.x
Everest	EVEB	21501S001		31.05.08*	Lack of data End	
Everest	EVEB	21501S001		23.03.08*	Lack of data Start	CDDIS 2.x
Everest	EVEB	21501S001		04.02.08*	Lack of data End	
Everest	EVEB	21501S001		15.10.07*	Lack of data Start	CDDIS 2.x
Everest	EVEB	21501S001		15.07.06*	Corrupted data End	
Everest	EVEB	21501S001		01.06.06*	Corrupted data Start (beacon problem)	CDDIS 2.x
Everest	EVEB	21501S001		14.02.05*	Lack of data End	
Everest	EVEB	21501S001		13.10.04*	Lack of data Start	CDDIS 2.x
Fairbanks	FAIB	40408S005				
Fairbanks	FAIB	40408S005		04.11.08*	Lack of data Start	CDDIS 2.x

Gavdos	GAVB	12618S001		-	Lack of data End	
Gavdos	GAVB	12618S001		08.08.08*	Lack of data Start	CDDIS 2.x
Gavdos	GAVB	12618S001		07.07.08*	Lack of data End	
Gavdos	GAVB	12618S001		28.05.08*	Lack of data Start	CDDIS 2.x
Gavdos	GAVB	12618S001		14.01.08*	Lack of data End	
Gavdos	GAVB	12618S001		29.10.07*	Lack of data Start	CDDIS 2.x
Gavdos	GAVB	12618S001		09.10.07*	Lack of data End	
Gavdos	GAVB	12618S001		03.09.07*	Lack of data Start	CDDIS 2.x
Gavdos	GAVB	12618S001		12.03.06*	Lack of data End	
Gavdos	GAVB	12618S001		08.05.04*	Lack of data Start	CDDIS 2.x
Greenbelt	GREB	40451S176		19.01.06*	Lack of data End	
Greenbelt	GREB	40451S176		11.09.05*	Lack of data Start	CDDIS 2.x
Greenbelt	GREB	40451S176		11.09.05*	Corrupted data End	
Greenbelt	GREB	40451S176		15.07.05*	Corrupted data Start (beacon problem)	CDDIS 2.x
Hartebeesthoek	HBMB	30302S008		25.02.08*	Lack of data End	
Hartebeesthoek	HBMB	30302S008		15.01.08*	Lack of data Start	CDDIS 2.x
Hartebeesthoek	HBKB	30302S006		13.06.06*	Lack of data End	
Hartebeesthoek	HBKB	30302S006		27.03.06*	Lack of data Start	CDDIS 2.x
Jiufeng	JIUB	21602S005		08.05.07*	Lack of data End	
Jiufeng	JIUB	21602S005		16.03.07*	Lack of data Start	CDDIS 2.x
Jiufeng	JIUB	21602S005		23.08.06*	Lack of data End	
Jiufeng	JIUB	21602S005		13.07.06*	Lack of data Start	CDDIS 2.x
Kerguelen	KETB	91201S005		-	Lack of data End	
Kerguelen	KETB	91201S005		11.09.08*	Lack of data Start	CDDIS 2.x
Kerguelen	KESB	91201S004		19.10.05*	Lack of data End	
Kerguelen	KESB	91201S004		13.05.05*	Lack of data Start	CDDIS 2.x

Kourou	KRVB	97301S004		28.10.07*	Lack of data End	
Kourou	KRVB	97301S004		15.08.07*	Lack of data Start	CDDIS 2.x
Krasnoïarsk	KRAB	12349S001		-	Lack of data End	
Krasnoïarsk	KRAB	12349S001		25.11.05*	Lack of data Start	CDDIS 2.x
Krasnoïarsk	KRAB	12349S001		25.11.05*	Corrupted data End	
Krasnoïarsk	KRAB	12349S001		13.06.05*	Corrupted data Start (beacon problem)	CDDIS 2.x
Mahe Island	MAHB	39801S005		25.03.08*	Lack of data Start	
Mahe Island	MAHB	39801S005		24.05.08*	Lack of data End	CDDIS 2.x
Mahe Island	MAHB	39801S005		19.01.06*	Lack of data Start	
Mahe Island	MAHB	39801S005		24.06.05*	Lack of data End	CDDIS 2.x
Marion-Island	MATB	30313S003		29.04.06*	Corrupted data End	
Marion-Island	MATB	30313S003		14.04.06*	Corrupted data Start (antenna drift)	CDDIS 2.x
Maldives	MALB	22901S002		20.08.08*	Lack of data End	
Maldives	MALB	22901S002		13.07.08*	Lack of data Start	CDDIS 2.x
Maldives	MALB	22901S002		09.07.08*	Lack of data End	
Maldives	MALB	22901S002		05.05.08*	Lack of data Start	CDDIS 2.x
Manilla	MANB	22006S002		03.03.08*	Lack of data End	
Manilla	MANB	22006S002		03.08.07*	Lack of data Start	CDDIS 2.x
Manilla	MANB	22006S002		22.11.06*	Lack of data End	
Manilla	MANB	22006S002		28.09.06*	Lack of data Start	CDDIS 2.x
Manilla	MANB	22006S002		14.09.06*	Lack of data End	
Manilla	MANB	22006S002		01.08.06*	Lack of data Start	CDDIS 2.x
Manilla	MANB	22006S002		03.02.05*	Lack of data End	
Manilla	MANB	22006S002		18.07.04*	Lack of data Start	CDDIS 2.x

Metsahovi	METB	10503S015		30.05.05*	Corrupted data End	
Metsahovi	METB	10503S015		07.04.05*	Corrupted data Start (parafoudre defectueux)	CDDIS 2.x
Port Moresby	MORB	51001S002		04.09.08*	Lack of data End	
Port Moresby	MORB	51001S002		06.08.08*	Lack of data Start	CDDIS 2.x
Mount Stromlo	MSPB	50119S004		13.01.07*	Lack of data End	
Mount Stromlo	MSPB	50119S004		03.08.06*	Lack of data Start	CDDIS 2.x
Noumea	NOWB	92701S003		24.08.06*	Lack of data End	
Noumea	NOWB	92701S003		13.04.06*	Lack of data Start	CDDIS 2.x
Tahiti	PAQB	92201S007		05.06.07*	Lack of data End	
Tahiti	PAQB	92201S007		07.04.07*	Lack of data Start	CDDIS 2.x
Ponta Delgada	PDMB	31906S002		07.06.08*	Corrupted data End	
Ponta Delgada	PDMB	31906S002		05.01.08*	Corrupted data Start (antenna problem)	CDDIS 2.x
Ponta Delgada	PDMB	31906S002		05.01.08*	Lack of data End	
Ponta Delgada	PDMB	31906S002		05.10.07*	Lack of data Start	CDDIS 2.x
Ponta Delgada	PDMB	31906S002		02.08.07*	Corrupted data End	
Ponta Delgada	PDMB	31906S002		03.04.07*	Corrupted data Start (connection problem)	CDDIS 2.x
Ponta Delgada	PDMB	31906S002		03.04.07*	Lack of data End	
Ponta Delgada	PDMB	31906S002		17.12.06*	Lack of data Start	CDDIS 2.x
La Reunion	REUB	97401S002		29.07.08*	Corrupted data End	
La Reunion	REUB	97401S002		24.04.08*	Corrupted data Start (connection problem)	CDDIS 2.x

Rikitea	RIKB	92301S002		-	Corrupted data End	
Rikitea	RIKB	92301S002		04.06.08*	Corrupted data Start (antenna drift)	CDDIS 2.x
Rikitea	RIKB	92301S002		02.02.08*	Lack of data End	
Rikitea	RIKB	92301S002		02.01.08*	Lack of data Start	CDDIS 2.x
Rikitea	RIKB	92301S002		14.12.07*	Lack of data End	
Rikitea	RIKB	92301S002		17.10.07*	Lack of data Start	CDDIS 2.x
Rio Grande	RIPB	41507S005		06.06.05*	Lack of data End	
Rio Grande	RIPB	41507S005		25.10.05*	Lack of data Start	CDDIS 2.x
Sal	SALB	39601S002		01.07.08*	Lack of data End	
Sal	SALB	39601S002		04.05.08*	Lack of data Start	CDDIS 2.x
Sal	SALB	39601S002		29.01.08*	Lack of data End	
Sal	SALB	39601S002		30.09.07*	Lack of data Start	CDDIS 2.x
Sal	SALB	39601S002		30.10.06*	Lack of data End	
Sal	SALB	39601S002		18.09.06*	Lack of data Start	CDDIS 2.x
Sal	SALB	39601S002		25.04.06*	Lack of data End	
Sal	SALB	39601S002		02.03.06*	Lack of data Start	CDDIS 2.x
Sal	SALB	39601S002		28.07.05*	Lack of data End	
Sal	SALB	39601S002		25.03.05*	Lack of data Start	CDDIS 2.x

Santiago	SANB	41705S009		04.03.08*	Lack of data End	
Santiago	SANB	41705S009		16.01.08*	Lack of data Start	CDDIS 2.x
Santiago	SANB	41705S009		16.01.08*	Corrupted data End	
Santiago	SANB	41705S009		31.12.07*	Corrupted data Start (beacon problem)	CDDIS 2.x
Santa Cruz	SCRB	42005S001		15.09.08*	Lack of data End	
Santa Cruz	SCRB	42005S001		01.06.08*	Lack of data Start	CDDIS 2.x
Socorro	SODB	40503S004		26.02.07	Lack of data End	
Socorro	SODB	40503S004		25.10.06	Lack of data Start	CDDIS 2.x
Saint John's	STJB	40101S002		30.08.06*	Lack of data End	
Saint John's	STJB	40101S002		07.06.06*	Lack of data Start	CDDIS 2.x
Saint John's	STJB	40101S002		08.06.05*	Lack of data End	
Saint John's	STJB	40101S002		06.01.05*	Lack of data Start	CDDIS 2.x
Thule	THUB	43001S005		19.02.08*	Lack of data End	
Thule	THUB	43001S005		01.11.07*	Lack of data Start	CDDIS 2.x
Thule	THUB	43001S005		10.07.06*	Lack of data End	
Thule	THUB	43001S005		04.05.06*	Lack of data Start	CDDIS 2.x
Tristan da C.	TRIB	30604S002		-	Lack of data End	
Tristan da C.	TRIB	30604S002		31.07.08*	Lack of data Start	CDDIS 2.x
Tristan da C.	TRIB	30604S002		16.10.07*	Lack of data End	
Tristan da C.	TRIB	30604S002		17.06.07*	Lack of data Start	CDDIS 2.x
Yellowknife	YEMB	40127S009		02.12.07*	Corrupted data End	
Yellowknife	YEMB	40127S009		02.10.07*	Corrupted data Start	CDDIS 2.x

Example of “missing data” report (to be discussed)

Author: Pascale Ferrage

Subject: Station disturbance for Santa Cruz (SCRUB)

Dear colleagues,

Station : Santa Cruz (SCRUB)

Missing data : from 01 June 08 to 15 September 08

Corrupted data :

Best Regards,