

WASTAC X BAND RECEIVING STATION

Bureau of Meteorology

Department of Land Administration, W.A.

Curtin University of Technology

Murdoch University

C.S.I.R.O.

Geoscience Australia

Presented by Ron Craig, DOLA

Station Description

3.6 metre mesh autotrack/programmable antenna

4.0 metre radome

Quorum downconverter

SUN 400MHz workstation

DLT 7000 archive tape drive

Purchased from Seaspace Corporation

Installed in September 2001 at Murdoch University

WASTAC Data Archive on DLT

Terra archive commenced 28 September 2001

Aqua archive commenced 20 July 2002

Archived passes as at 26th August 2002

Terra 1545 passes

Aqua 175 passes

WASTAC MODIS Processing Hardware

Linux dual 1000MHz computer with
160GB disk

DLT 8000 tape drive

Installed at Leeuwin Centre, Perth, W.A.

Managed by DOLA.

WASTAC MODIS Processing Software

SUN workstation:

Terascan

LINUX workstation:

IDL

IMAPP

MS2GT

Processing for each MODIS pass:

The capture of passes at the Murdoch site is automatic, with a conflict resolution process for Terra/Aqua based on the higher maximum elevation angle winning.

Due to some terrestrial ground RF sources, about 10 predicted passes in the 16 day cycle are manually edited to elevate the starting position of the antenna to above 2 degrees.

The software provided by Seaspac includes send_pass and receive_pass to transfer data during antenna capture to a remote site. This facility is not used as the internet bandwidth available between Murdoch and DOLA is 3.5Mb/sec compared to the transmission rates of over 13 Mb/sec for Terra, and higher for Aqua.

A rotating buffer of 11 passes is stored on the SUN workstation.

The ingested satellite data is processed by Seaspac software (modisin/getccsds) into a format compatible with IMAPP (.pds file).

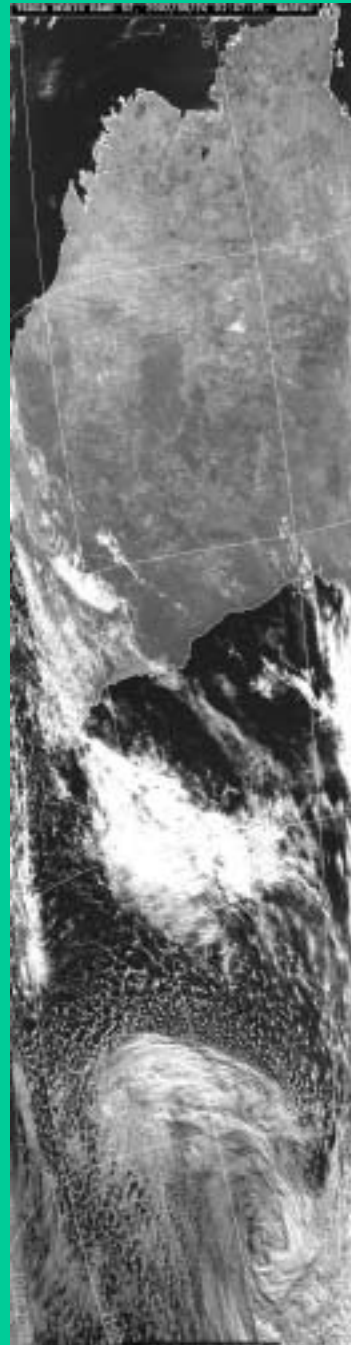
After completion of acquisition the .pds file is processed through Terascan to create a quicklook which is ftp'd to DOLA and placed on the WASTAC MODIS quicklook site.

The .pds file is ftp'd to the LINUX computer and processed through IMAPP (Wisconsin University) to create radiometrically calibrated .hdf files. Three days of .pds files are stored on the LINUX computer.

The .hdf files are processed through MS2GT (University of Colorado) to place the calibrated, georectified data onto a latitude longitude grid with .0025 degree spacing.

At present only the 250 metre channels and some of the 1 km channels are transferred to DOLA for further processing.

Terra MODIS Quicklook



DOLA MODIS Products

DOLA processes MODIS products from WASTAC to fire and NDVI products automatically.

FIRE:

Both daylight and nighttime Terra MODIS data are processed automatically to produce fire locations for passes which cover WA and NT.

The algorithm used is an adjusted one from DOLA's NOAA fire hotspot location algorithm.

MODIS Hotspot Detection

Terra-1 AUG 26 09:48 2002 WST

Area : Western Australia

Method : Automatic

[Large map](#)

[Small map](#)

[Satellite map](#)

Terra-1 AUG 26 09:48 2002 WST

Area : Northern Territory

Method : Automatic

[Large map](#)

[Small map](#)

[Satellite map](#)

Terra-1 AUG 26 09:48 2002 WST

Area : South Australia

Method : Automatic

[Large map](#)

[Small map](#)

[Satellite map](#)

Terra-1 AUG 26 21:52 2002 WST

Area : Western Australia

Method : Automatic

[Large map](#)

[Small map](#)

[Satellite map](#)

Terra-1 AUG 26 21:52 2002 WST

Area : Northern Territory

Method : Automatic

[Large map](#)

[Small map](#)

[Satellite map](#)

Terra-1 AUG 26 21:52 2002 WST

Area : South Australia

Method : Automatic

[Large map](#)

[Small map](#)

[Satellite map](#)

Hotspot detection - 25 AUG 2002 18:42 - Netscape

File Edit View Go Communicator Help

Back Forward Reload Home Search Netscape Print Security Stop

Bookmarks Location http://www.rss.dole.wa.gov.au/modstd/2002/AUG/25/1_200208250242ws_automasc.html What's Related

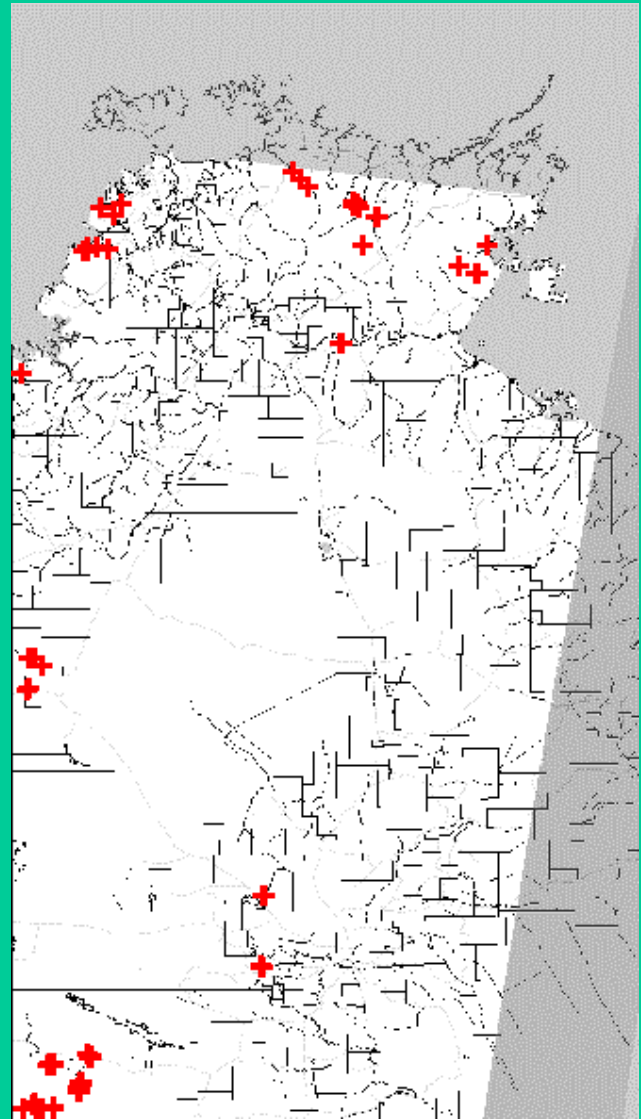
InstantMessage WebMail Radio People YellowPages Download Calendar RealPlayer

[Area 1 AUG 25 18:42 2002 WST](#) [Archive version](#) [Text version](#)

Number	Latitude	Longitude	Description	Easting	Northing	Zone
1	-28 53	120 41				
2	-28 53	120 42				
3	-28 53	121 21				
4	-28 53	121 22				
5	-28 45	121 02				
6	-28 33	121 02				
7	-28 33	121 03				
8	-28 33	121 03				
9	-28 30	121 06				
10	-28 30	121 07				
11	-28 30	121 07				
12	-28 30	121 08				
13	-28 30	121 08				
14	-28 30	121 09				
15	-28 30	121 07				
16	-28 28	120 45				
17	-28 17	120 36				
18	-28 10	120 41				
19	-28 09	120 37				
20	-28 09	120 37				
21	-28 00	120 49				
22	-27 59	120 49				
23	-27 59	120 49				
24	-21 28	119 17				
25	-21 28	119 17				
26	-21 28	119 16				
27	-21 28	119 16				
28	-21 28	119 17				
29	-21 28	119 17				

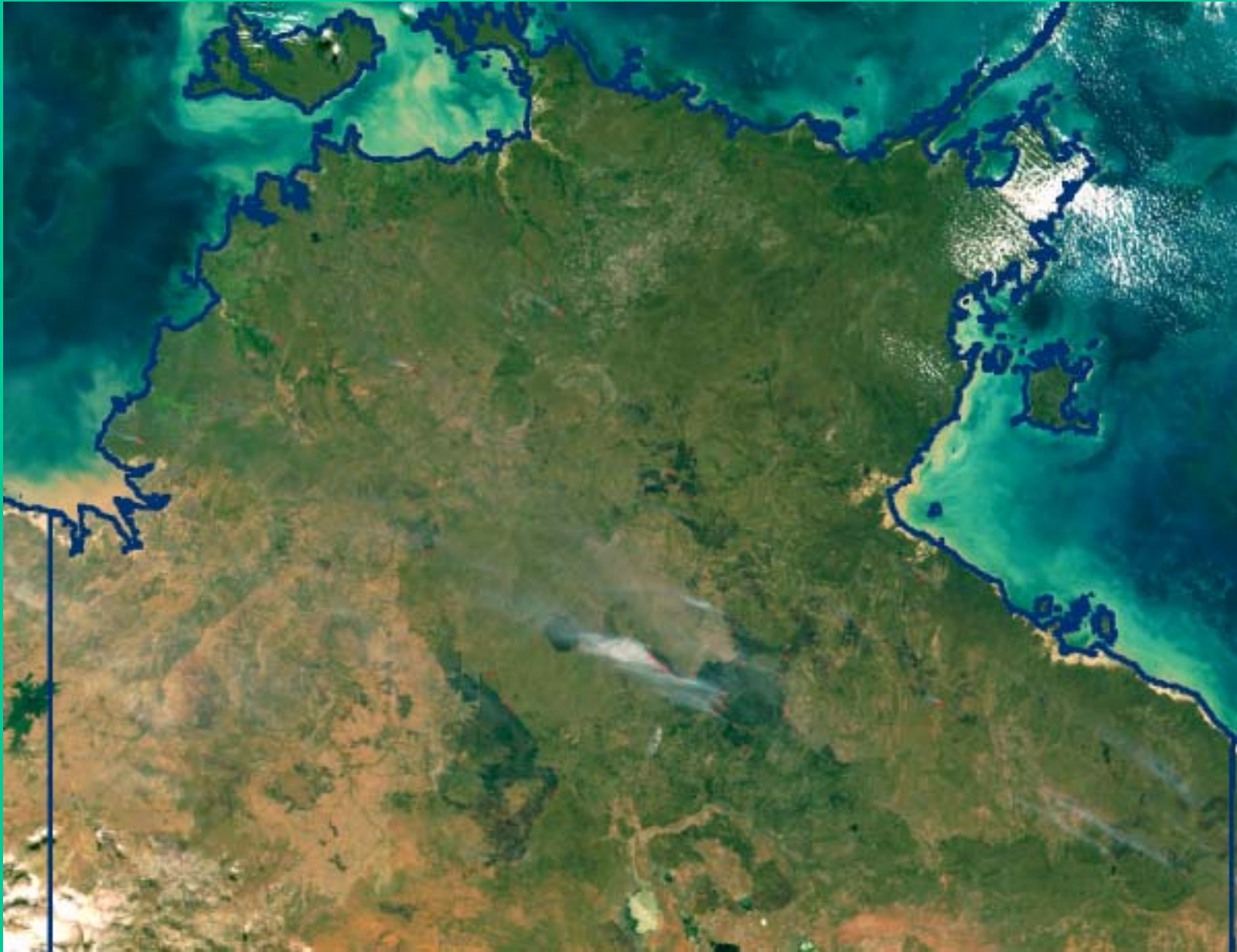
Document Done

MODIS Hot Spots



Zoom on area of
interest:





NDVI

The Terra MODIS daylight data are processed for NDVI production using channels 1 and 2, plus satellite and sun geometry to filter out off nadir and, later, sun-glint affected areas.

The composites have been found to be accurate in their geographic positioning, with no individual pass corrections, although there are some artefacts from the bow-tie correction still visible in the water areas under high contrast stretching.

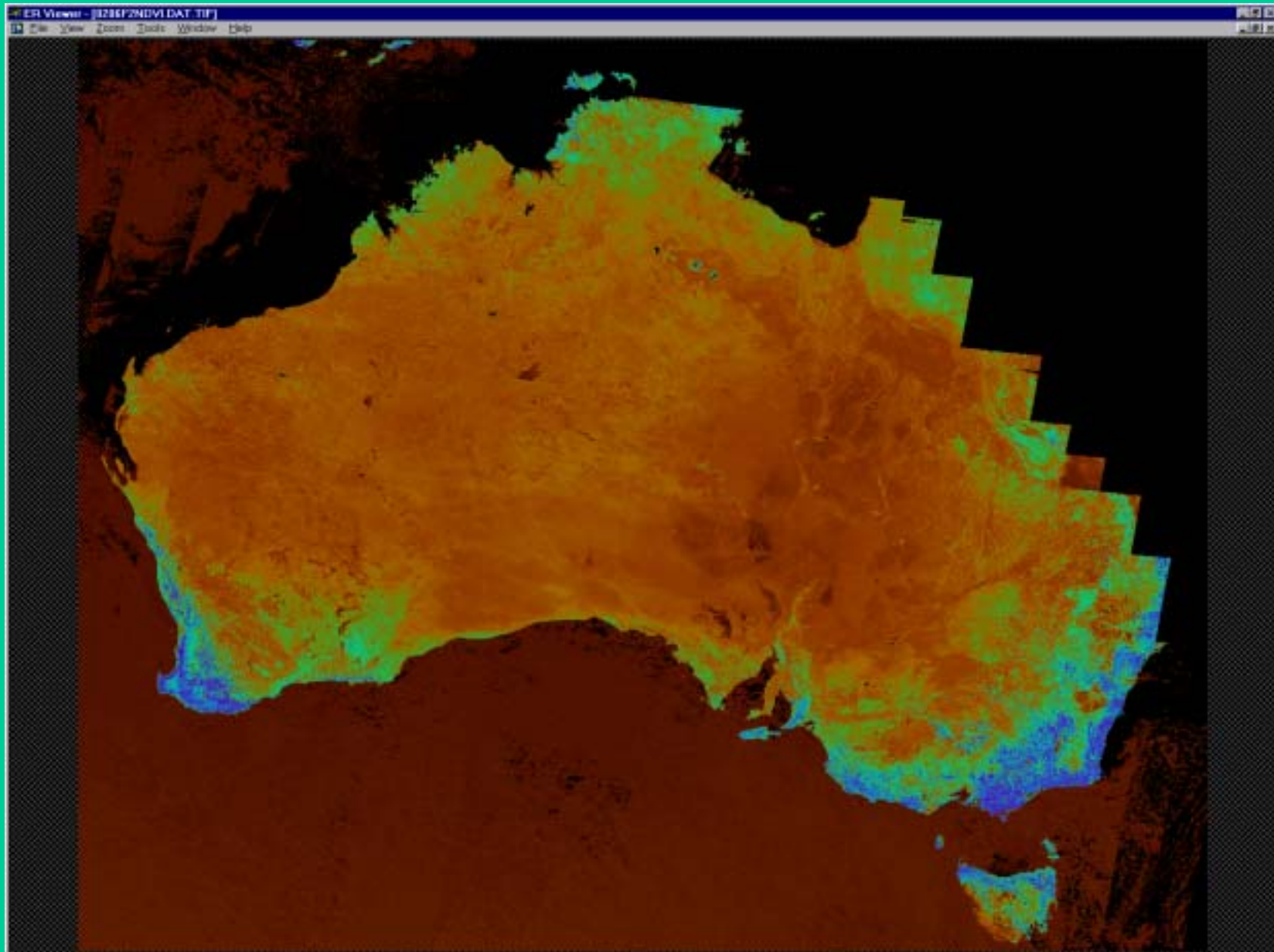
The data that follows have been collected at the WASTAC station.

Completing the Australian composite will require data from another source, e.g. ACRES or the US DAAC.

Every five days NDVI data is being provided to WA Agriculture Department for exceptional circumstances mapping.

DOLA has commenced trial Aqua MODIS compositing.

Terra MODIS half month NDVI composite



ER Viewer - [E20MF2_FULLRES_NDM1.TIF]

File View Zoom Tools Window Help

