

MODIS Data & Processing Systems at CSIRO/EOC

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MODIS Data Processing Meeting, Hobart, May 2004

What We.....

- ARE:
 - Facilitator/supporter of remote sensing activity within CSIRO.
 - Active in remotely sensed time series research (particularly AVHRR) as a means of providing context for today's data and understanding biophysical dynamics.
 - Links to projects with "end-users", both within CSIRO and via CSIRO research partners.
- NOT:
 - A receiving station or DB site.
 - Very far down the track with MODIS.



Notional Aspirational Niche

- Maintainers of timeseries of MODIS data for Australasian region to underpin CSIRO research, partnership and consulting.
- Support (among others):
 - Key Land DAAC products
 - Ocean Product generation
 - Algorithm development (time series, diurnal thermal dynamics,)



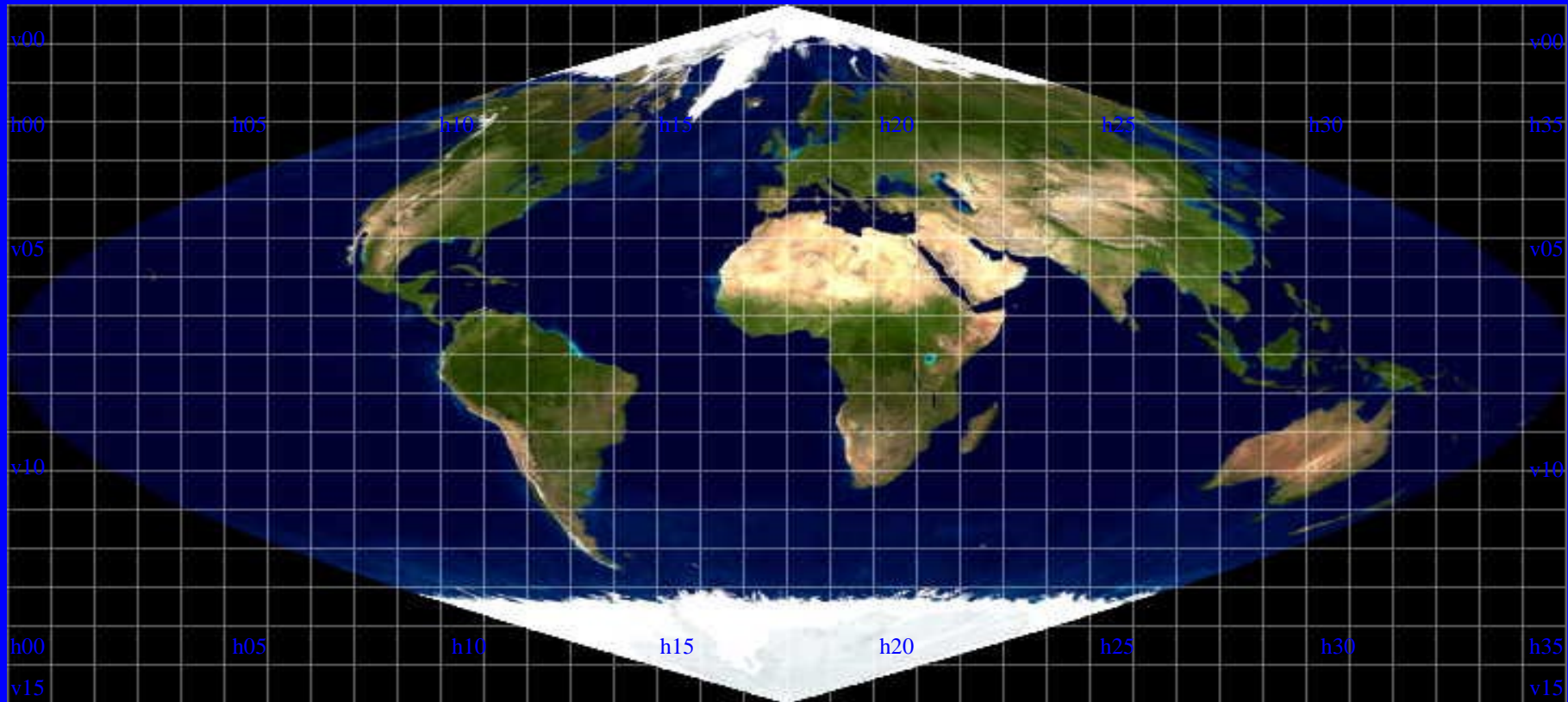
Holdings 1: Land

- From LPDAAC
- Terra only (so far)
- "Australian" tiles

Product	Lev	Rev	Proj	Res.	Int.	Start.	End.	N	GB
MOD09A1 SURFACE REFLECTANCE	3	4	SIN	500m	8d	2000057	2003361	4528	2037.6
MOD11A2 LAND SURFACE TEMP./EMIS.	3	4	SIN	1km	8d	2000057	2003281	4224	101.4
MOD12Q1 LAND COVER TYPE	3	3	ISIN	1km	3m	2000289	2000289	25	0.6
MOD13A1 VEGETATION INDICES	3	4	SIN	500m	16d	2000049	2003353	2250	288.0
MOD13Q1 VEGETATION INDICES	3	4	SIN	250m	16d	2000049	2004017	2222	1126.6
MOD14A2 THERMAL ANOMALIES/FIRE	3	4	SIN	1km	8d	2000057	2003361	4445	13.3
MOD15A2 LEAF AREA INDEX/FPAR	4	4	SIN	1km	8d	2000057	2003361	4304	25.8
MOD17A2 NET PHOTOSYNTHESIS	4	4	SIN	1km	8d	2001001	2003361	3323	13.3
MOD17A3 NET PRIMARY PRODUCTION	4	3	ISIN	1km	1yr	2001001	2002001	47	0.2
MOD43B3 ALBEDO	3	4	SIN	1km	16d	2000049	2003273	2222	146.7
MOD43B4 NADIR BRDF-ADJ. REFL.	3	4	SIN	1km	16d	2000049	2003353	2223	66.7

Total: ~3.5 TB





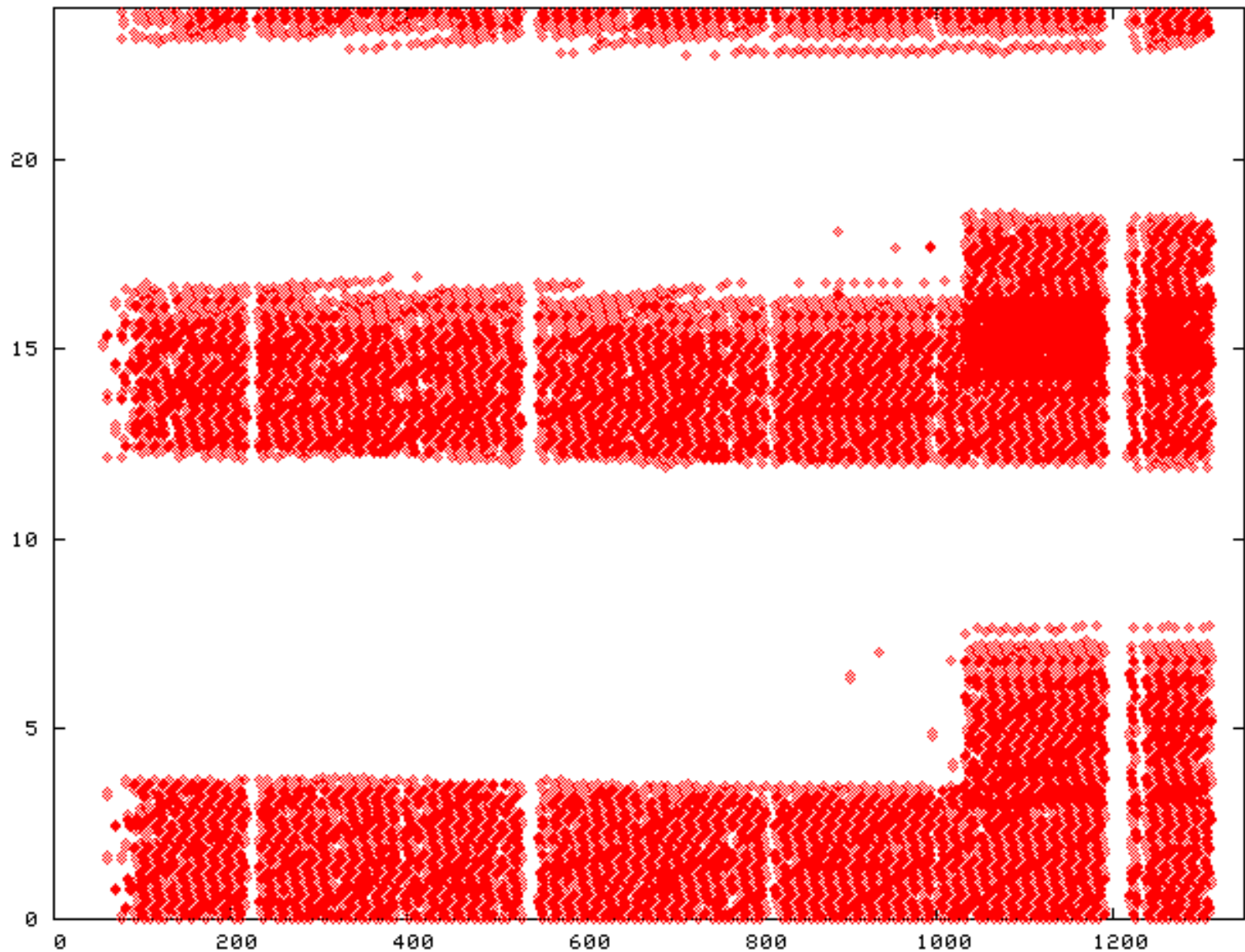
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Holdings 2: L1B

- Direct from the GES DAAC (originally via CMR)
- MOD021km
 - ~15000 swath data granules (~4TB)
 - 250m+500m channels aggregated to 1km
 - Planning to get MOD02H and MOD02O (250m and 500m native)
 - "Australian Region" (=all land+lots of water)
 - Nearly all V004 processing



GMT



Days since 2000/1/1

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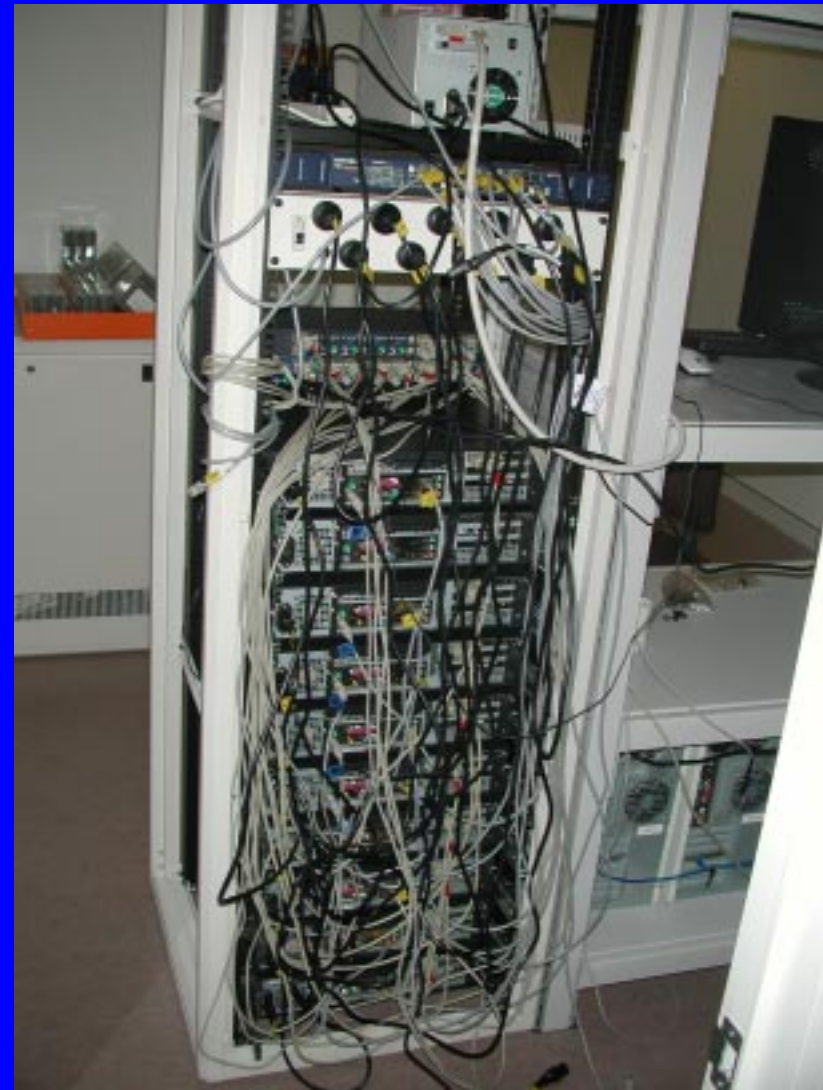


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Hardware

- SCSI too expensive & maybe not necessary
- IDE much cheaper
- Why not stick IDE x M in PC x N and get a parallel processing capacity?
- Linux - free, widely used (commonly supported), easily scripted
- 11 systems (5.5 TB) with DLT drive (40GB)
- CL&W shared system with 2 x LTO2 drives (200GB capacity)
- Air conditioning has become an issue.
- Was working - CPU fan issues - will be up again soon.....





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Next Steps - H/W

- Finish shaking down the hardware.
- Move it to properly a/c premises.
- Shake it down again after move.
- Plan for new round of H/W funding to support growth in data sets (more nodes or TB raid?)



Next Steps - S/W

- Database engine (& schema)
- Data server (DODS?)
- Web server
- HDFLook
- Modis Reprojection Tool
- Support specific needs of particular projects (eg context for Sentinel)



Next Steps - Content

- MOD021km
 - Ingest
 - Extract metadata, quicklook imagery
 - Compress (gzip)
- LPDAAC Tiles
 - Update to present



Next Steps - Next Steps

- Oceans code (Suber) running on L1B data
- C-models using L3/L4 DAAC products running in parallel in a cluster environment
- Ancillary data acquisition/archival

