




# Current Status

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SIO

# HiSeasNet Services

- ✍ Installation & commissioning for new ships
- ✍ Ship and shore equipment maintenance 2x/yr
- ✍ Satellite bandwidth
  - ✍ Ship-to-shore: 96kbps (C-Band), 64kbps (Ku)
  - ✍ Shore-to-ship: 180kbps for 3 slots on AOR C-Band, 160kbps for 5 slots on POR C-Band, 192kbps for 3 slots on Ku-Band
  - ✍ Per ship slice of shore carrier: ~32/64 (C/Ku) kbps
- ✍ Hub station connection to Internet
  - ✍ Direct routing through to home institution
  - ✍ Voice over IP through to home institution
  - ✍ Email
  - ✍ Web browsing
  - ✍ Video teleconferencing

# HiSeasNet Fleet

 C-Band (2.4m dish,  
Global coverage)

 Atlantis

 Kilo Moana

 Knorr


 Melville

 Revelle

 Seward Johnson

 Thompson

 Langseth (future)

 Ku-Band (1.2m dish,  
mostly North  
America coastal  
coverage)

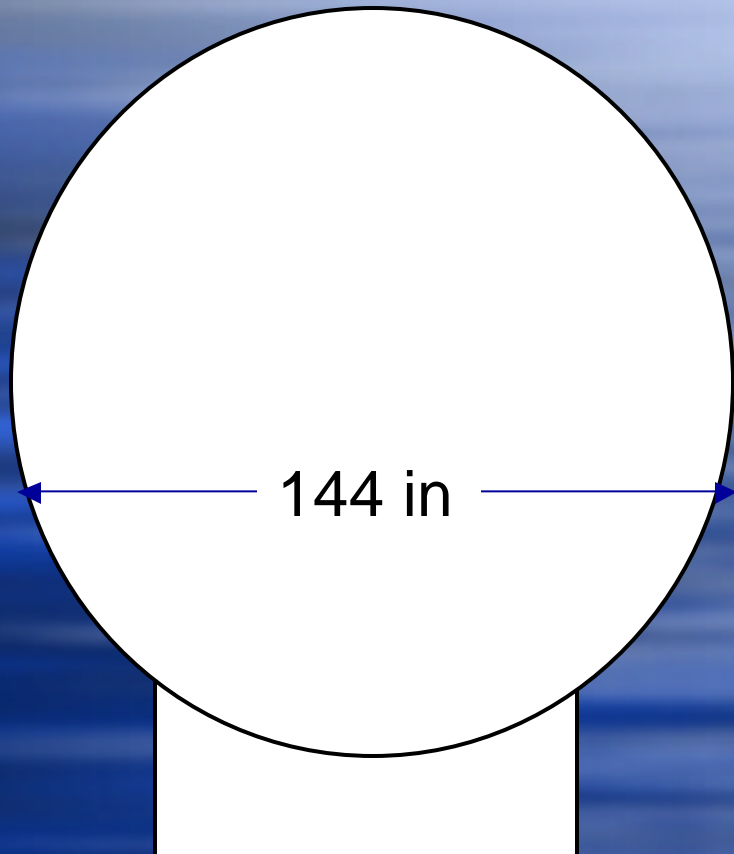
 Endeavor

 New Horizon

 Pelican (1m dish)

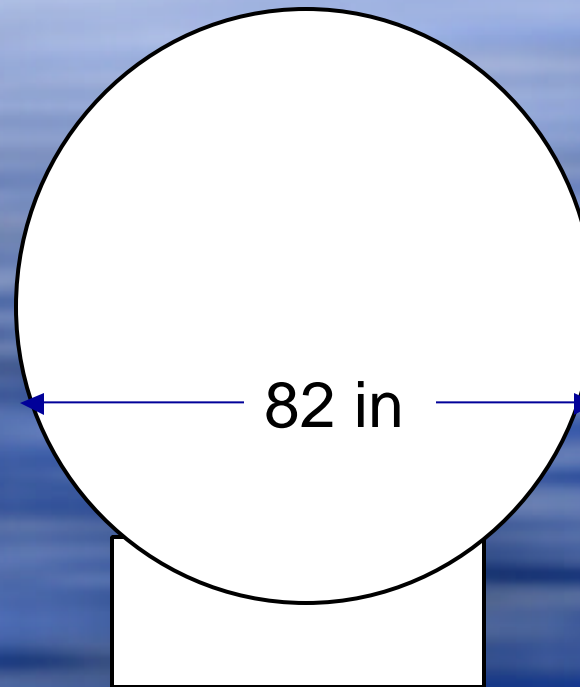
# Antenna Comparisons

C-Band



2.4m dish

Ku-Band

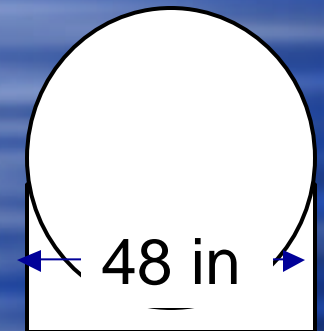


1.2m dish

800 lbs

Rx gain: 41.65dB

Small  
Ku-Band



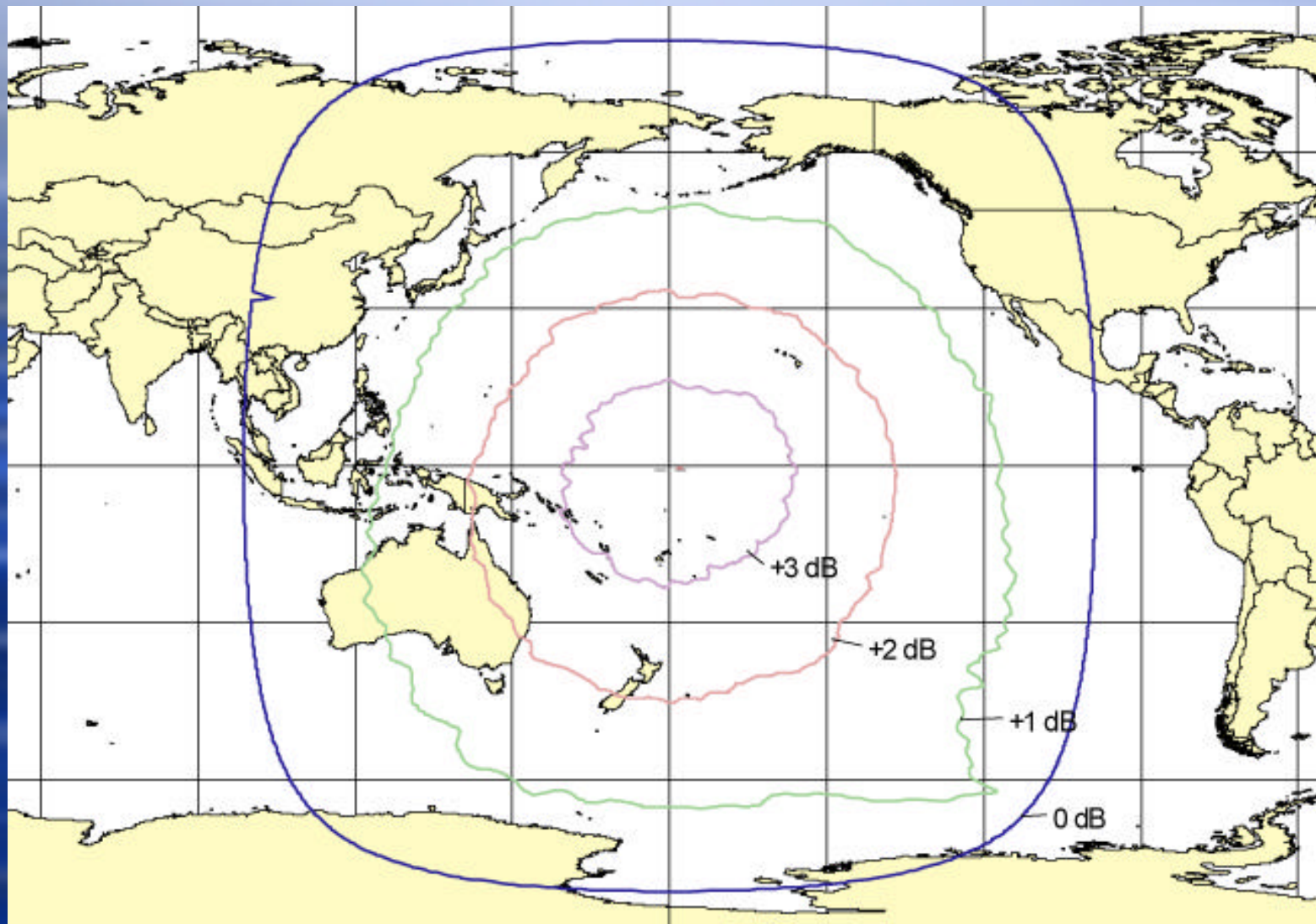
1m dish

250 lbs

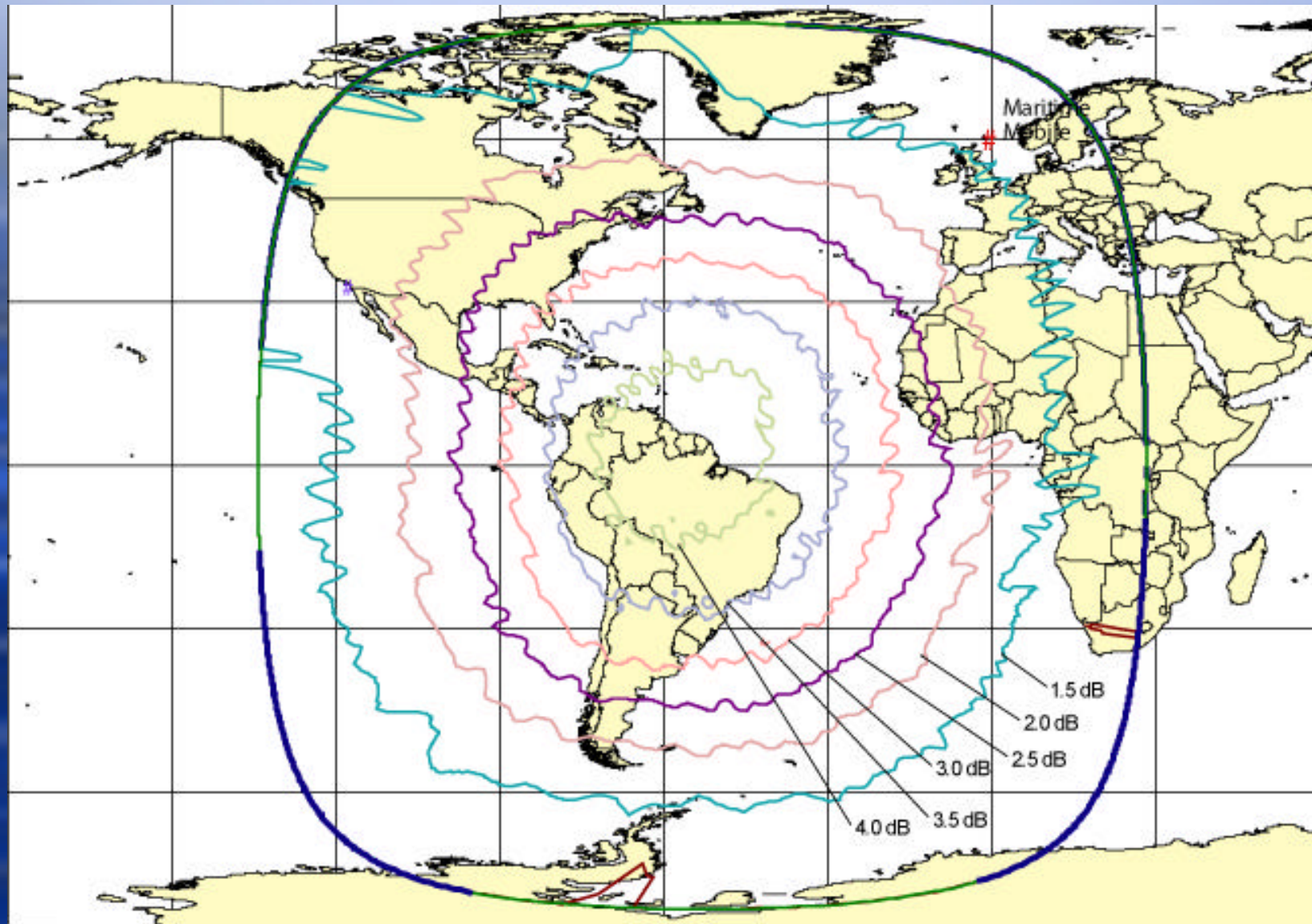
Rx gain: 40.1 dB



# Pacific Coverage



# Atlantic/Eastern Pacific





# Ku-band Coverage



# Equipment Downtime

Date	Location	Problem	Downtime
2/2002	Revelle	Bad rotary joint on install	0 ship days
3/2002	Revelle	Router failure	~0 ship days
4/2002	Revelle	Antenna PCU failure (had spare)	0 ship days
11/11/2003	Melville	Bad PCU at install	0 ship days
4/27/2004	Revelle	Failed LNA	20 ship days
12/1/2004	Revelle	Converter failure in port	0 ship days
2/2/2005	Earth Station	Circuit breaker tripped	1 ship day
3/17/2005	Earth Station	Converter problem?	1 ship day
4/1/2005	Atlantis	Broken antenna sprocket	1 ship day
4/11/2005	Melville	Failed power amp	~30 ship days
5/20/2005	Earth Station	Blown fuse	
7/10/2005	Kno rr	Broken antenna drive belt	2 ship days?
7/24/2005	Earth station	Failed power amp	12.5 ship days
7/31/2005	Earth station	Failed power amp	3.5 ship days
8/11/2005	Earth station	Noisy link to the internet	15 ship days
9/12/2005	Earth station	Ku-band converter intermittent	0 ship days
9/5/05	Thompson Video gear	Ku-band power amp failure	1 ship day
10/1/05	Earth Station	Blown fuse	1 ship day?
11/8/05	Thompson	Pedestal structure failure	10 ship days
11/12/05	Earth Station	Blown fuse	1 ship day
3/22/05	Seward Johnson	Bad power amp at install	0 ship days
3/23/05	Seward Johnson	Bad spare PCU at install	0 ship days
5/11/06	Earth station	Campus ACT router failure	3.5 ship days
7/2006	Kno rr	Bad level cage and PCU	1 ship day?
8/14/06	Pelican	Failed BUC shortly after install	2 ship days
8/15/06	New Horizon	Failing Amp(?) Causing shoulders affecting Endeavor signal?	1 ship day



# Failures and Spares

- ✍ Most problems are user or ship related
  - ✍ Power outage, antenna repoints, gyro failure, unfamiliarity with gear, etc.
  - ✍ Solution: Learn gear and ship quirks via training program under development
- ✍ Antenna pointing failures occur, but usually are not catastrophic
  - ✍ Solution: Upgrading older ship installations during maintenance to newer SeaTel antenna logic
- ✍ When equipment dies, it is usually RF gear, despite it being the “most reliable in the business”
  - ✍ Solution: Spare LNAs on board, encourage all ships to have on-board RF spares, depot converter and power amp spares in SD

# Future Work

- ✍ Work on training program
  - ✍ Multi-day, hands-on and classroom training for geared at HiSeasNet techs
  - ✍ Will involved theory, troubleshooting, procedures, operations, monitoring, etc.
  - ✍ Have a rough outline now, will be soliciting feedback soon
  - ✍ Hope to generate better permanent written materials for HiSeasNet operations
- ✍ Bring Langseth online
- ✍ Continue routine maintenance/upgrades of all equipment