Satellite Changes Affecting the Ocean Weather PDT

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- The techniques developed by the Ocean Weather PDT have potential global applications.
GMS-GOES 9

• GMS has been replaced by GOES-9.
• GMS replacement will be launched this winter. Replacement will have same channels as GOES-9.
• GOES-9 adds 3.9 micron channel. (Vis, IR, WV, 12u, and now 3.9u channels.)
• 3.9 channel allows for detection of low clouds and multispectral ash techniques.
GOES-12 (east)

- New channel configuration.
- 12 micron channel eliminated and replaced by a 13 micron CO2 channel.
- Water vapor channel spatial resolution changed from 8 km to 4 km.
- GOES-13 and 14 will have same channels (expected lifetime through 2012).
GOES-east Losses

• Traditional 11-12 split window volcanic ash technique is no longer available for GOES-east.
• Volcanic ash techniques based on 3.9 channel can detect ash, but are hindered by thin cirrus crystals.
GOES-east Gains

• Water Vapor channel has improved resolution and senses slightly lower in atmosphere.
• Gravity waves show up in water vapor images.
• Visible brightness higher (not calibrated)
• CO2 channel can be used for accurate cloud height measurements.
Mountain Waves
GOES-8 Waves
GOES-10 Waves
GOES-west

• GOES-10 continues to operate normally.
• GOES-11 is being stored in orbit. GOES-11 has same channel configuration as GOES-8, 9, and 10.
• GOES-11 is most likely replacement for GOES-west.
• GOES-east and west will have different channel configurations for next 5+years.
Meteosat Second Generation (MSG)

- Launched last year and currently undergoing checkout (at 0 deg W). Operational this fall.
- 12 channel imager.
- Will be useful for checkout of techniques for future GOES.
- Indian Ocean will continue to have older Meteosat satellites for next few years.