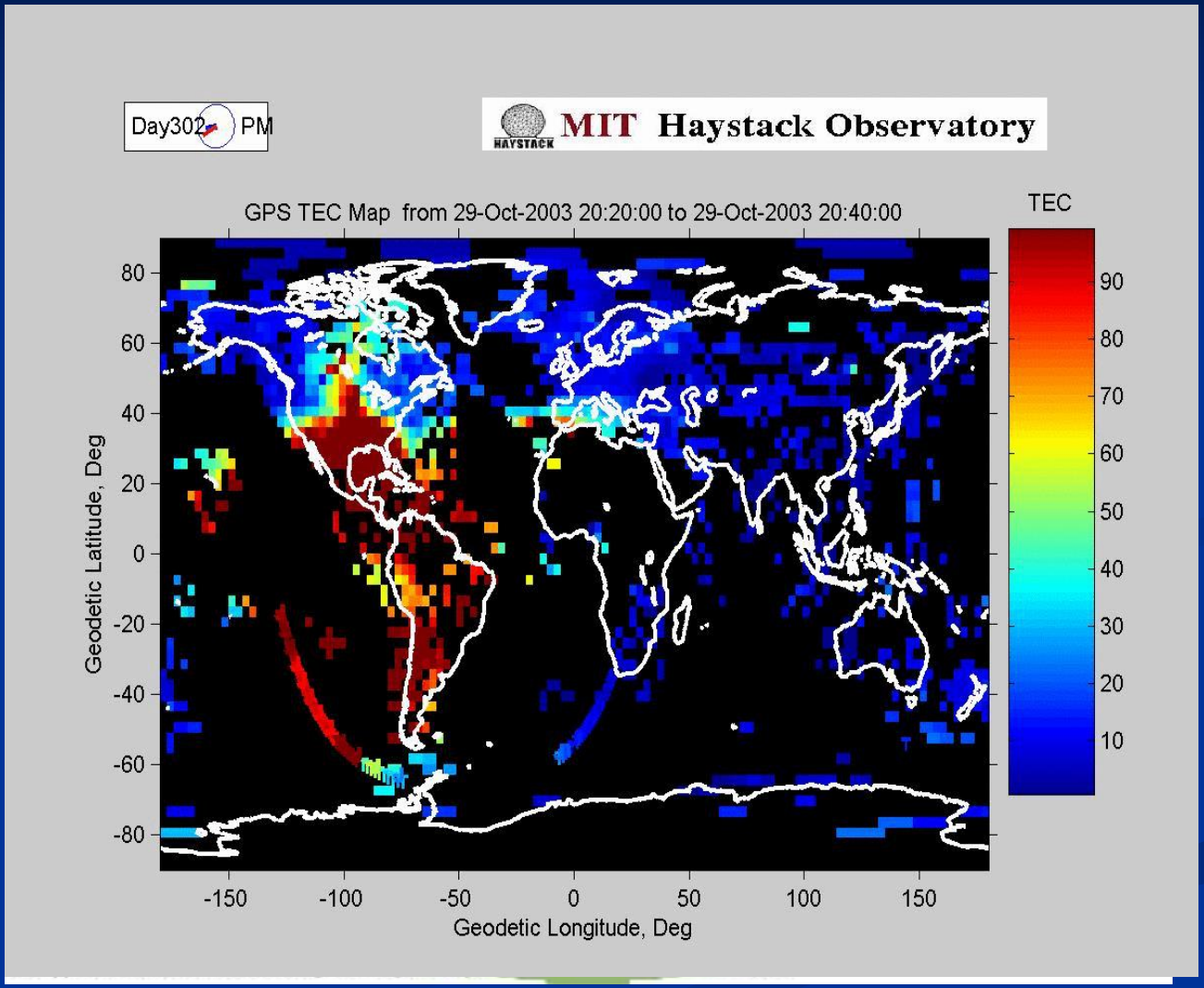
Wide Area Distribution of 'Raw' Information

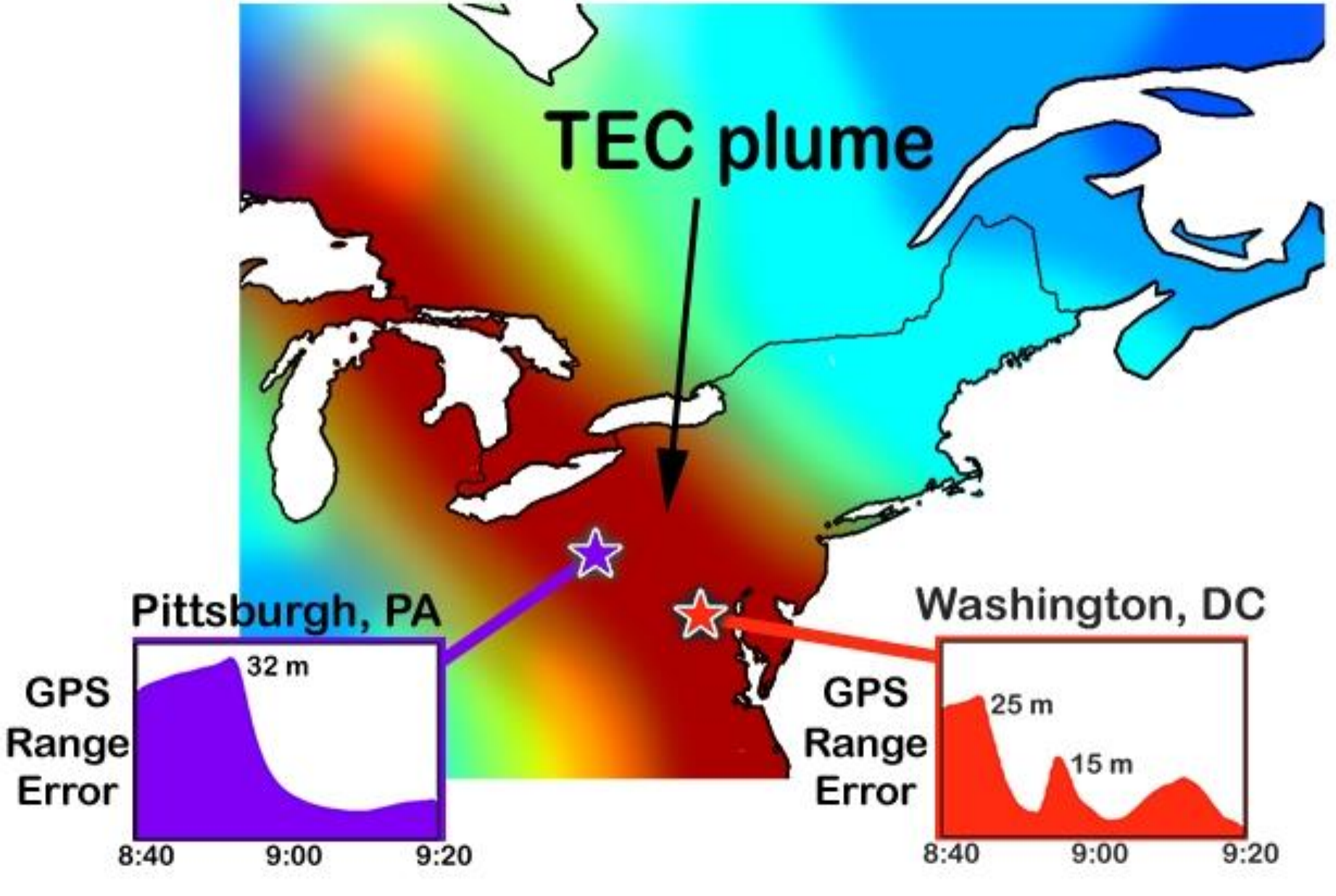
Distributed networks of sensors yield global physics unattainable with single-point measurements

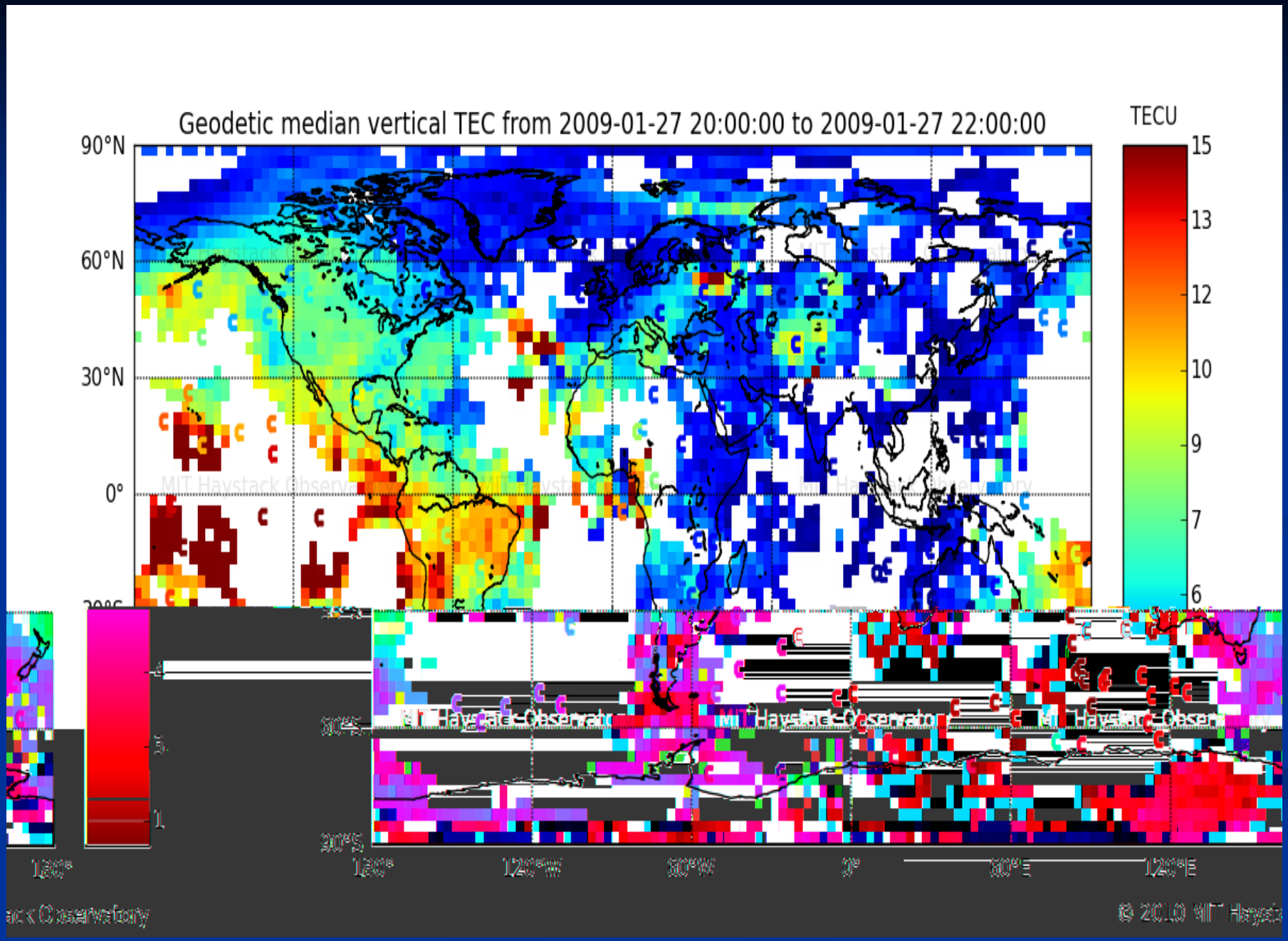
Example :
Global GPS-derived ionospheric mapping during geomagnetic disturbances



[Coster et al, 2003]

November 20, 2003




Geodetic median vertical TEC from 2009-01-27 20:00:00 to 2009-01-27 22:00:00
TECU
15
13
12
10
9
7
6
90°N
60°N
30°N
0°
30°S
120°W
120°E
MIT Haystack Observatory

Great News!

(Bradford W. Parkinson, 9/29/2010 ION)

New Satellite Systems and Signals on the way

Should Enable improved:

- Accuracy
- Availability (and improved Interference rejection)
- Integrity
- Continuity

PNt set to Explode with Opportunities

GLONASS – (Russia)

- Next generation 4 new Civil signals at two new frequencies

GPS (USA)

- Only Current Operational Civil Signal
- Next generation 4 new signals at two new frequencies

Galileo (European)

- Next generation 4 new Civil signals at two new frequencies

Compass (*Beidou* China)

QZSS (Japan)

The Future

- Multiple instruments combined, real-time global access, virtual observatories

Future:

NOAA Space Weather Prediction Center control room