NASA EOSDIS Evolution in the BigData Era

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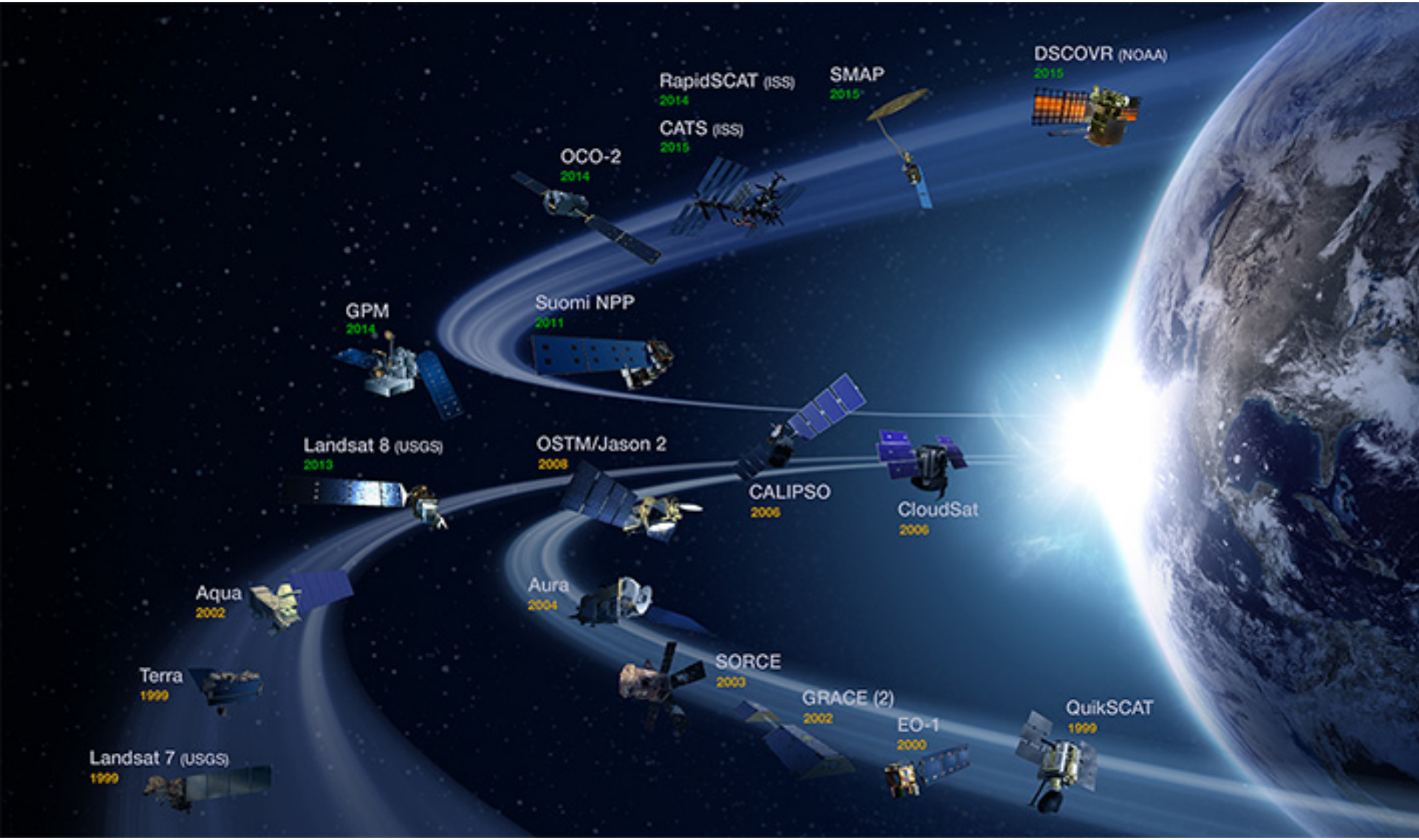
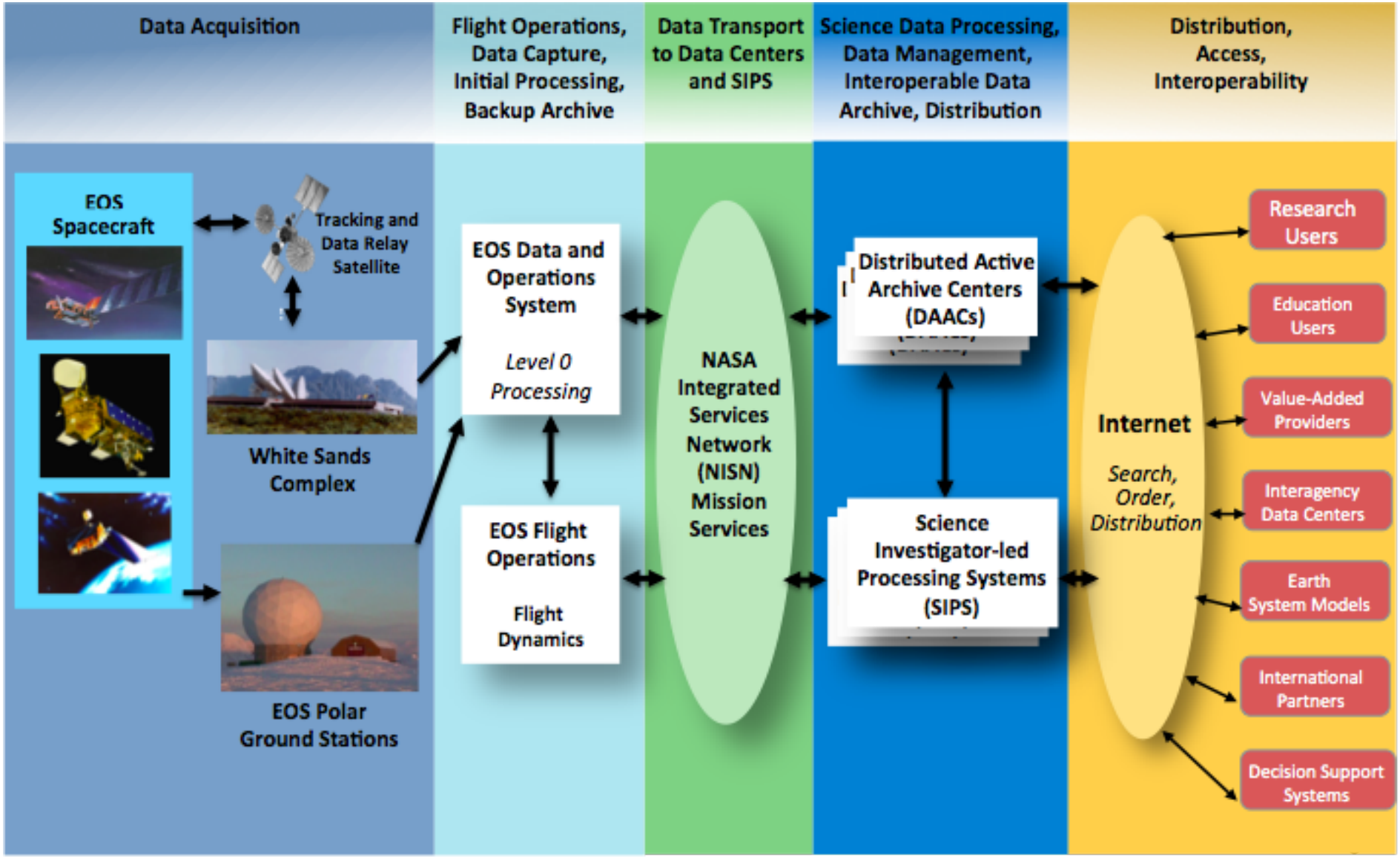
Code 586, NASA/GSFC
HPC Forum 2015

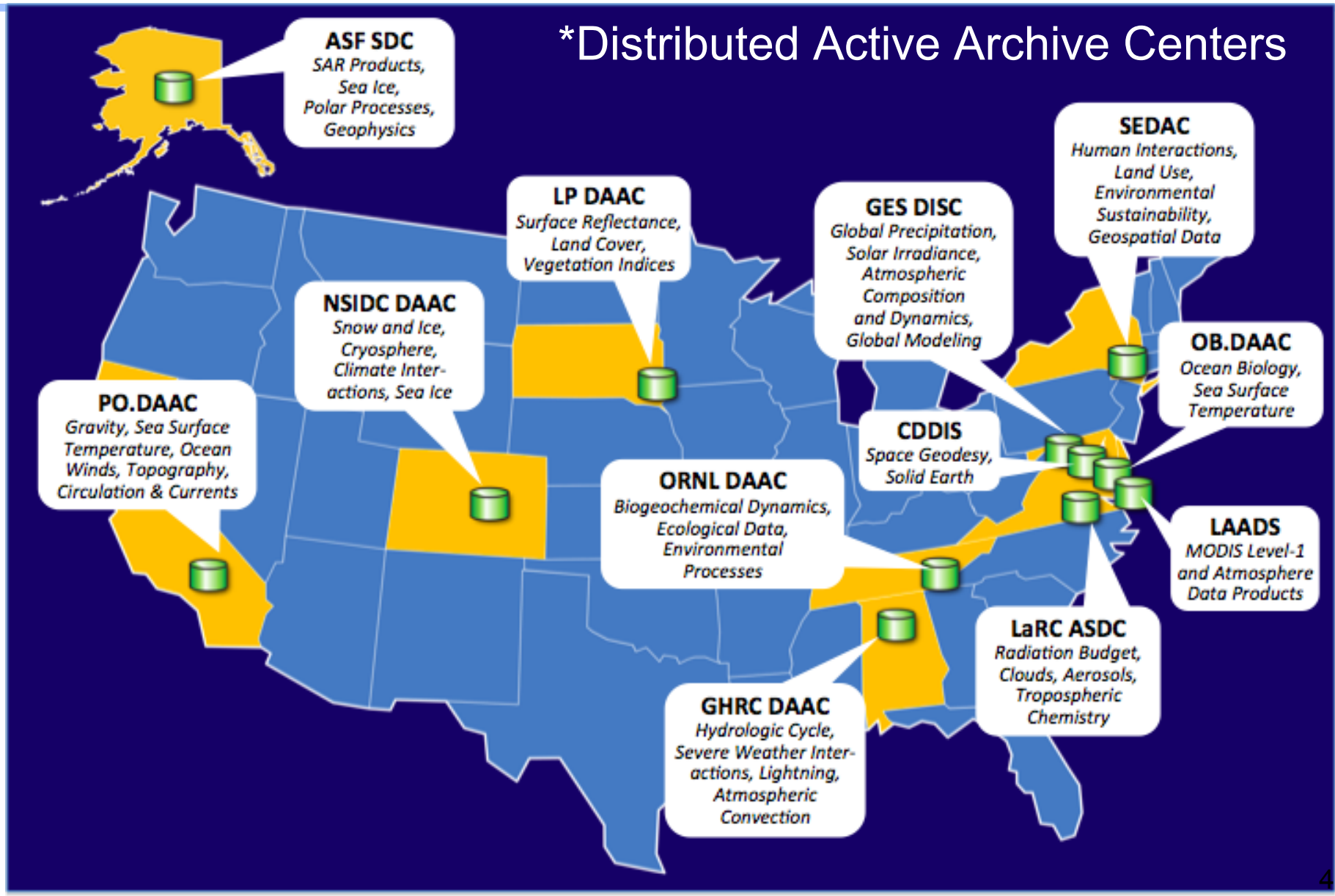
EOSDIS processes, archives and distributes data from Earth observing satellites



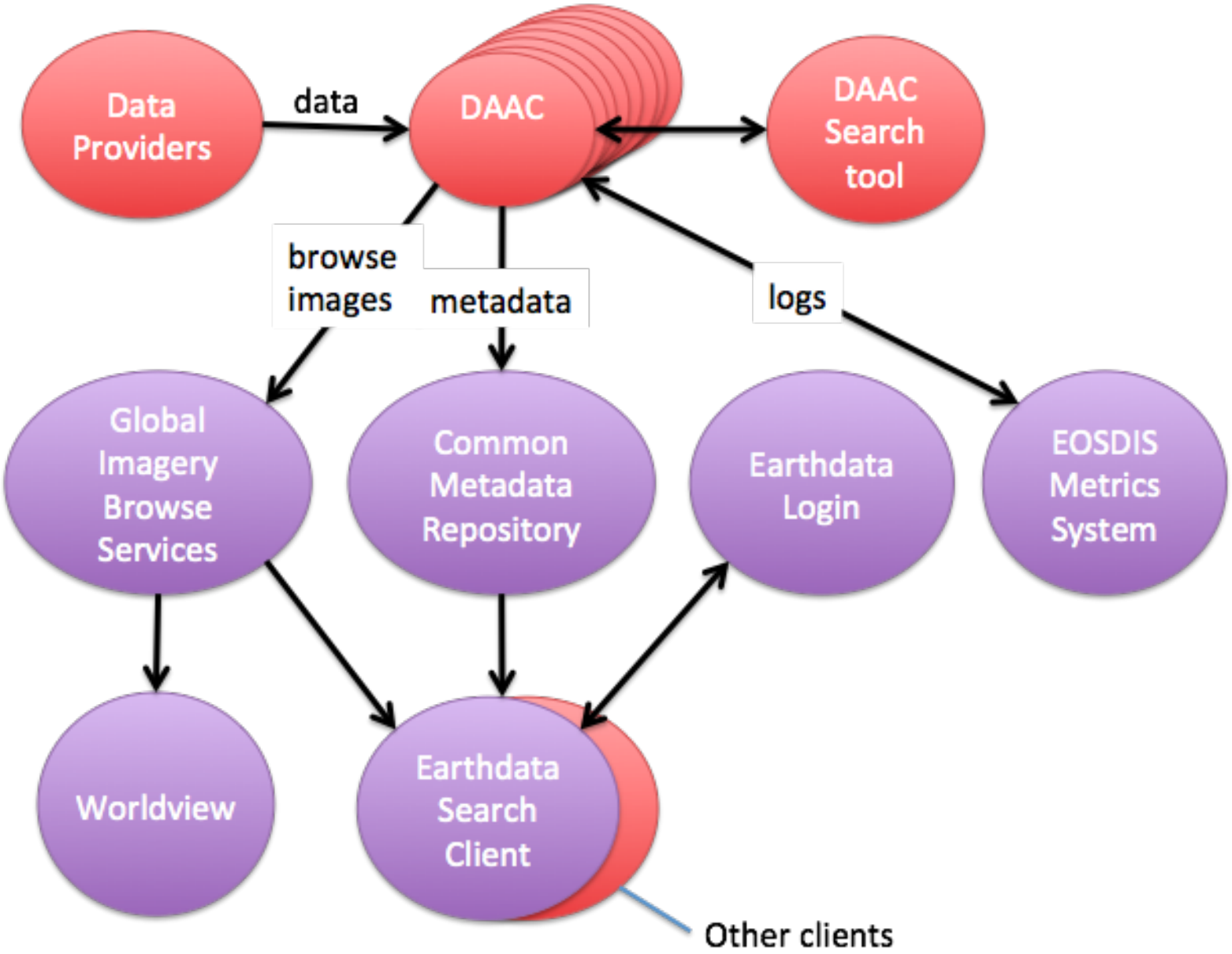
EOSDIS manages data from downlink to distribution



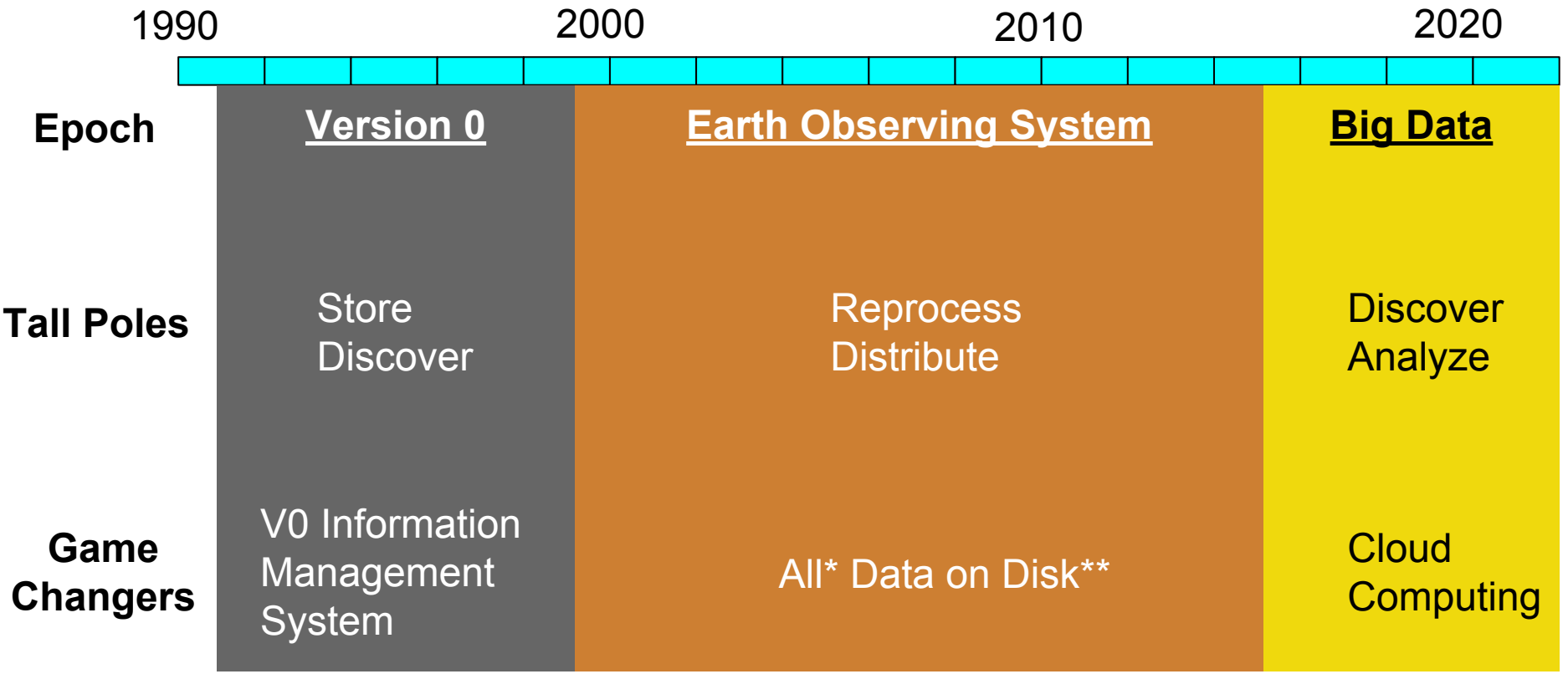
Data are archived and distributed by DAACs oriented around science disciplines



DAACs and users are supported by EOSDIS Common Services

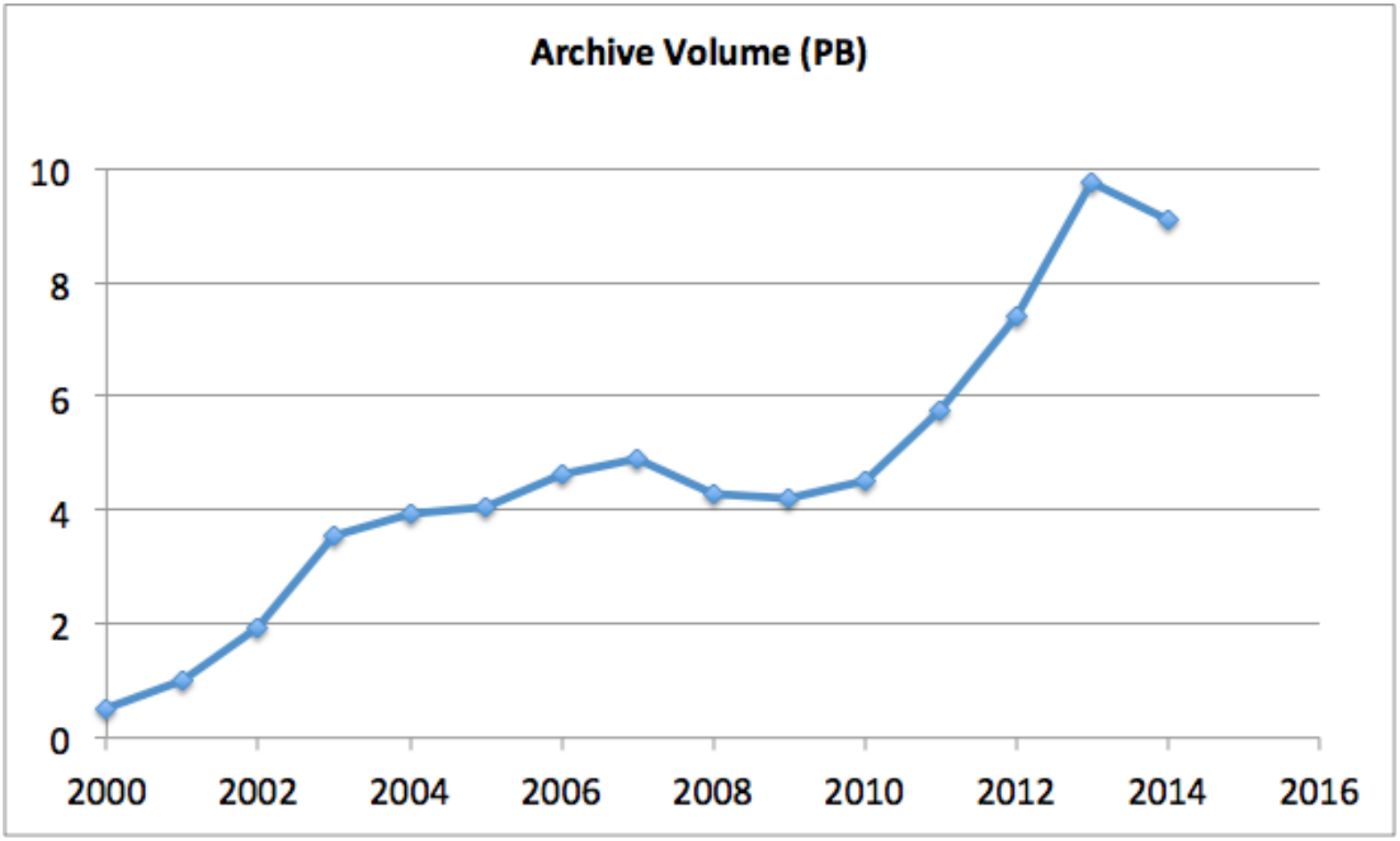


EOSDIS Evolves Continually

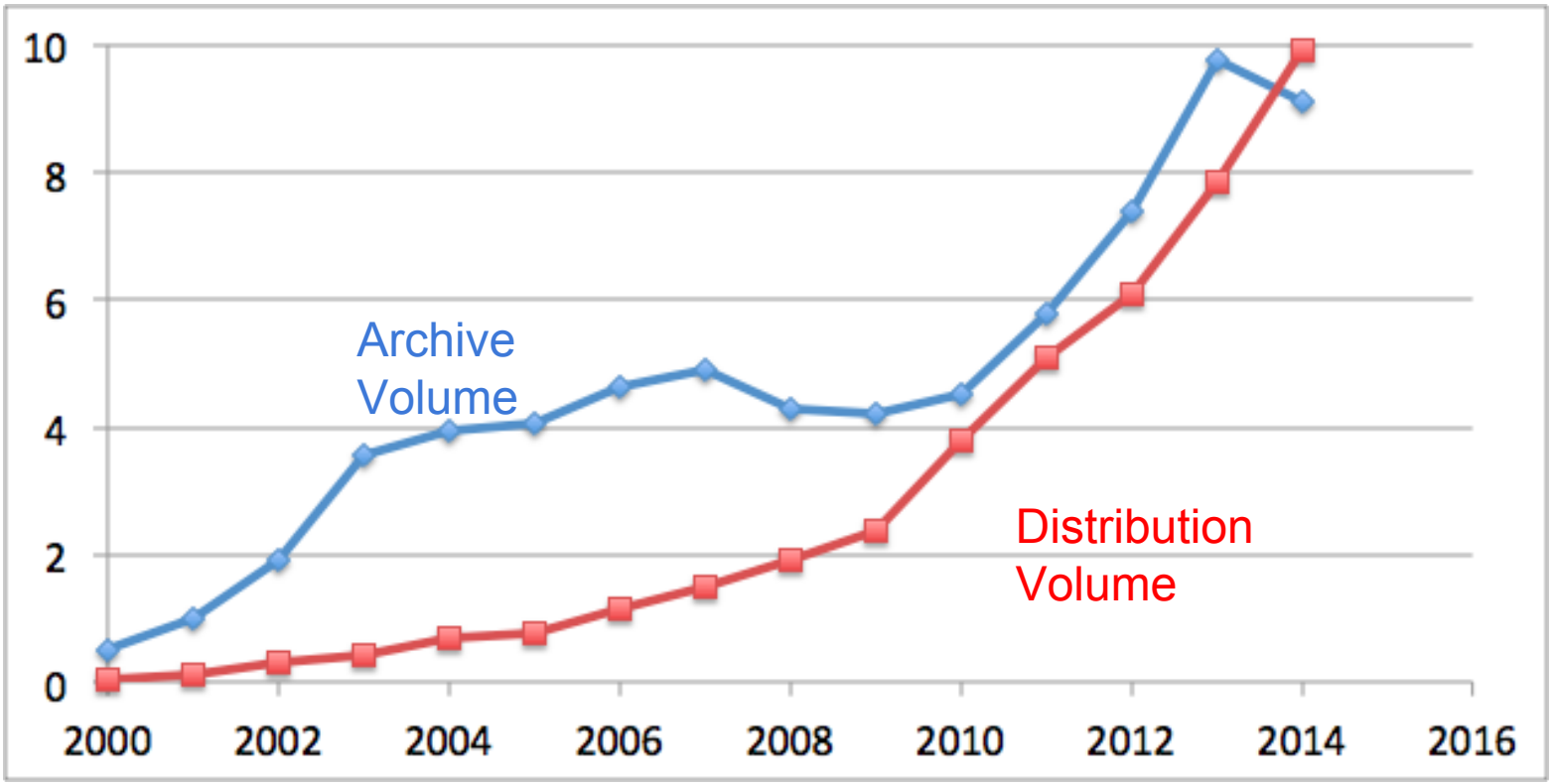


*Almost
**Thank you, HDF internal compression!

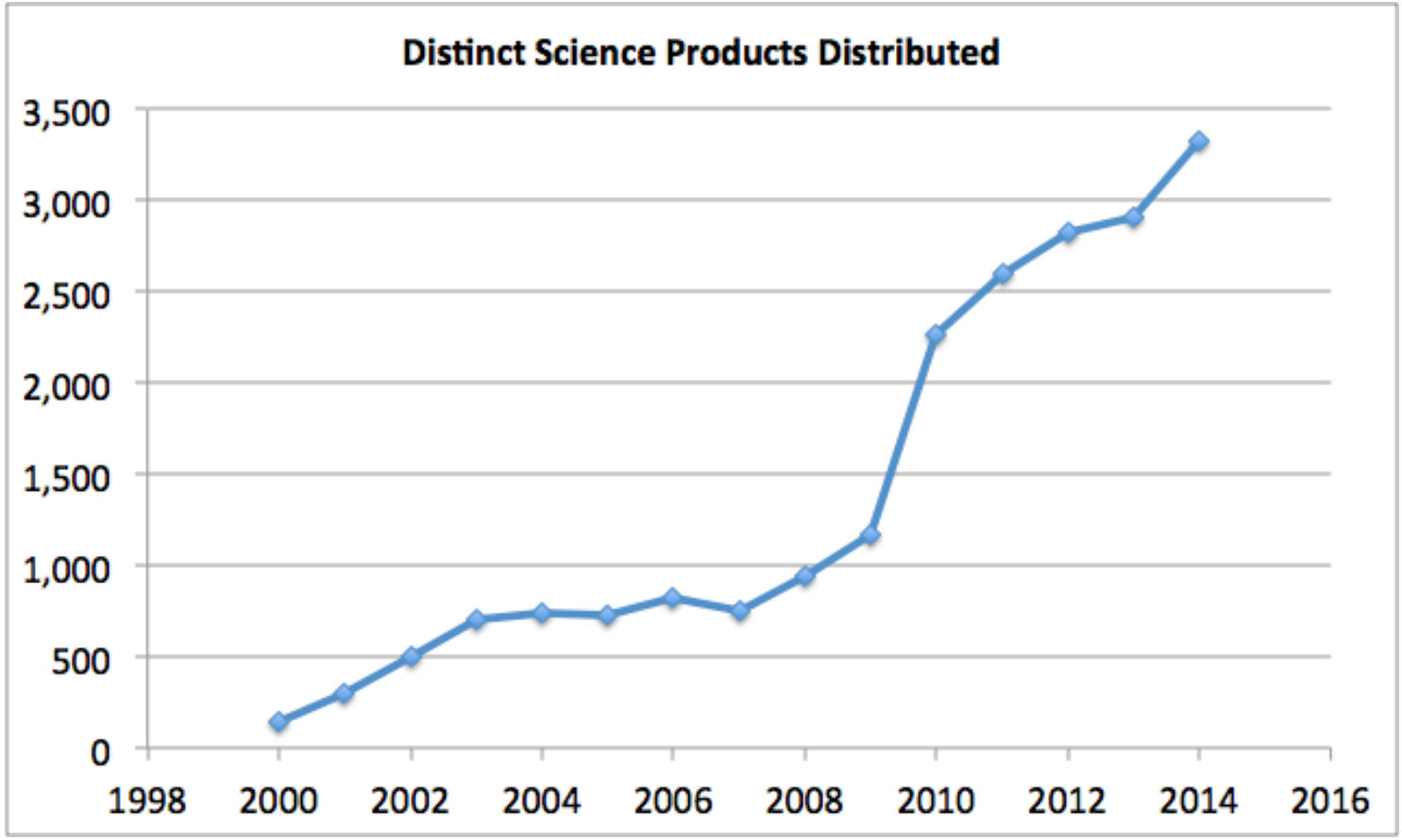
Big Data Volume Growth



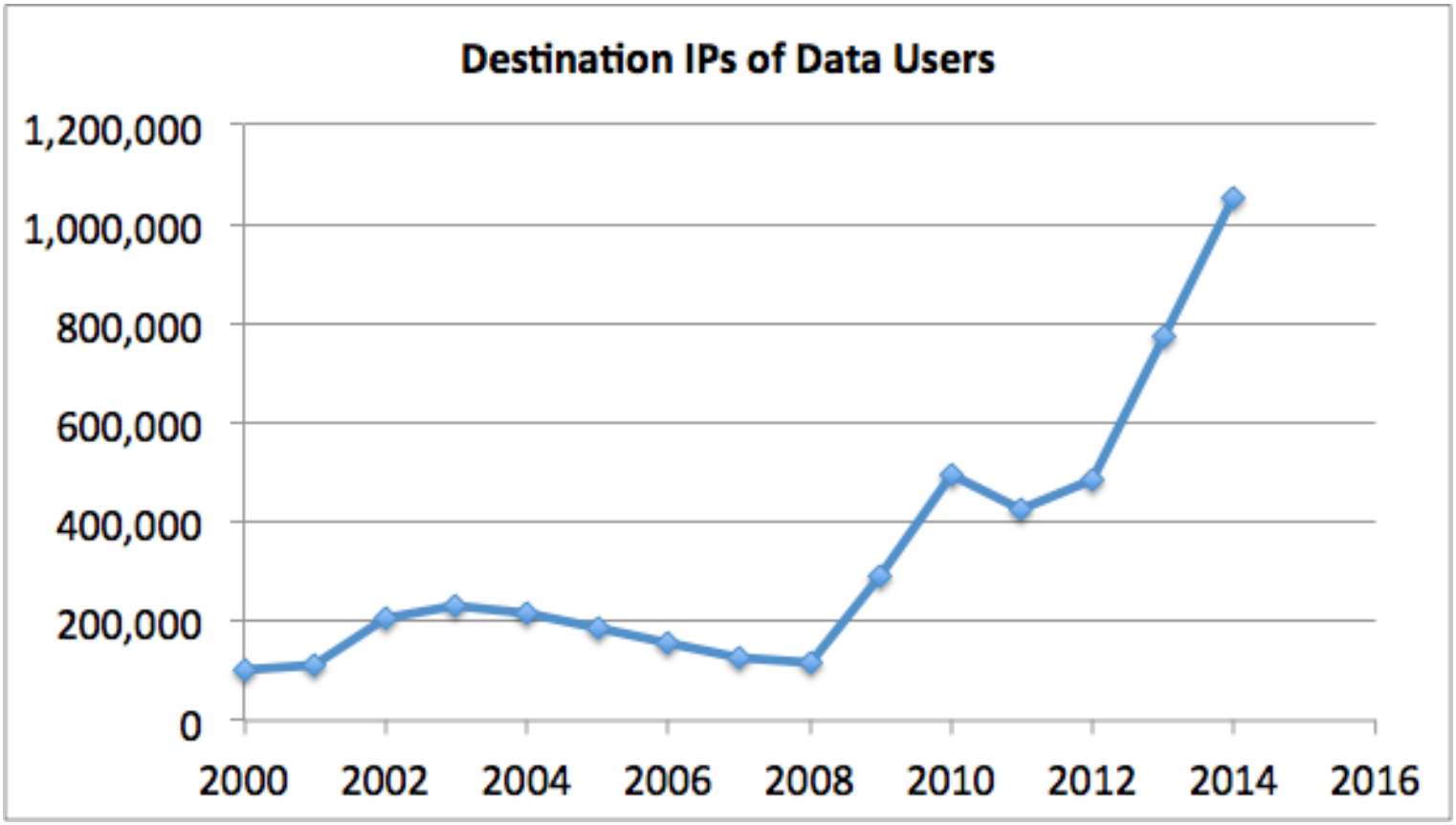
Big Data Distribution Growth



Big Data Variety Growth



Big Data User Growth

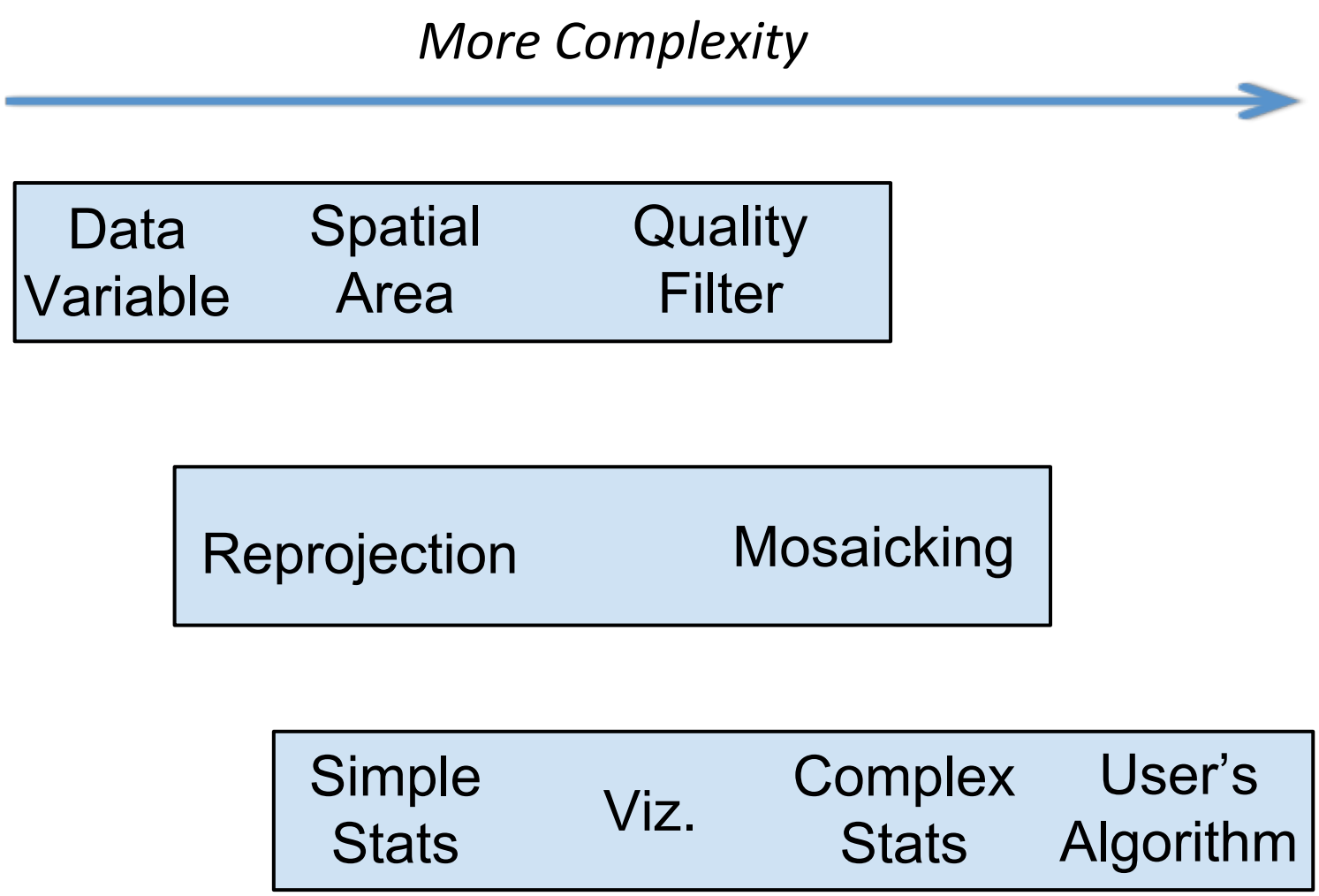


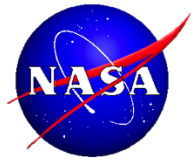
EOSDIS in the Big Data epoch will enable more analysis closer to the data.

Let's Break that Down...

"more analysis closer to the data"

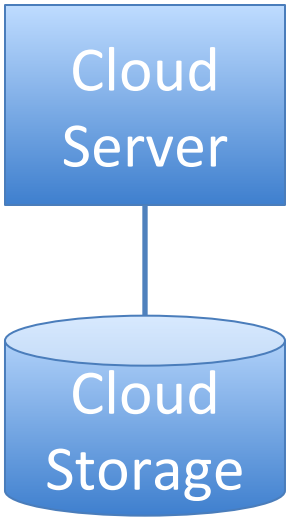
“More Analysis”



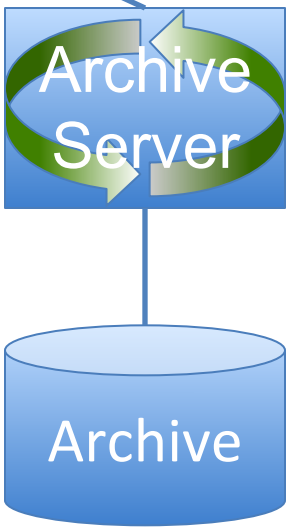


“more analysis closer to the data”

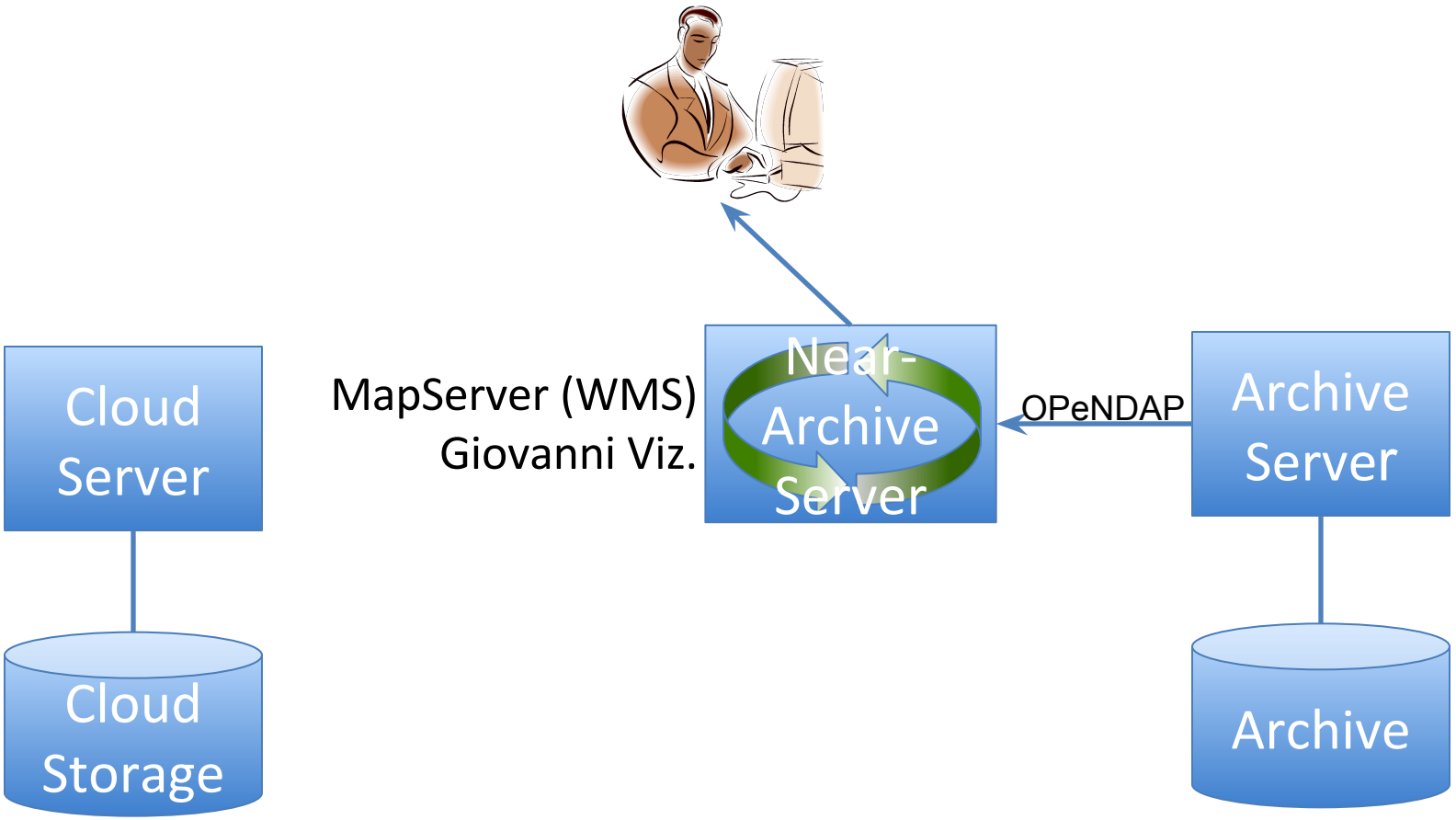
“Close To” = At Archive



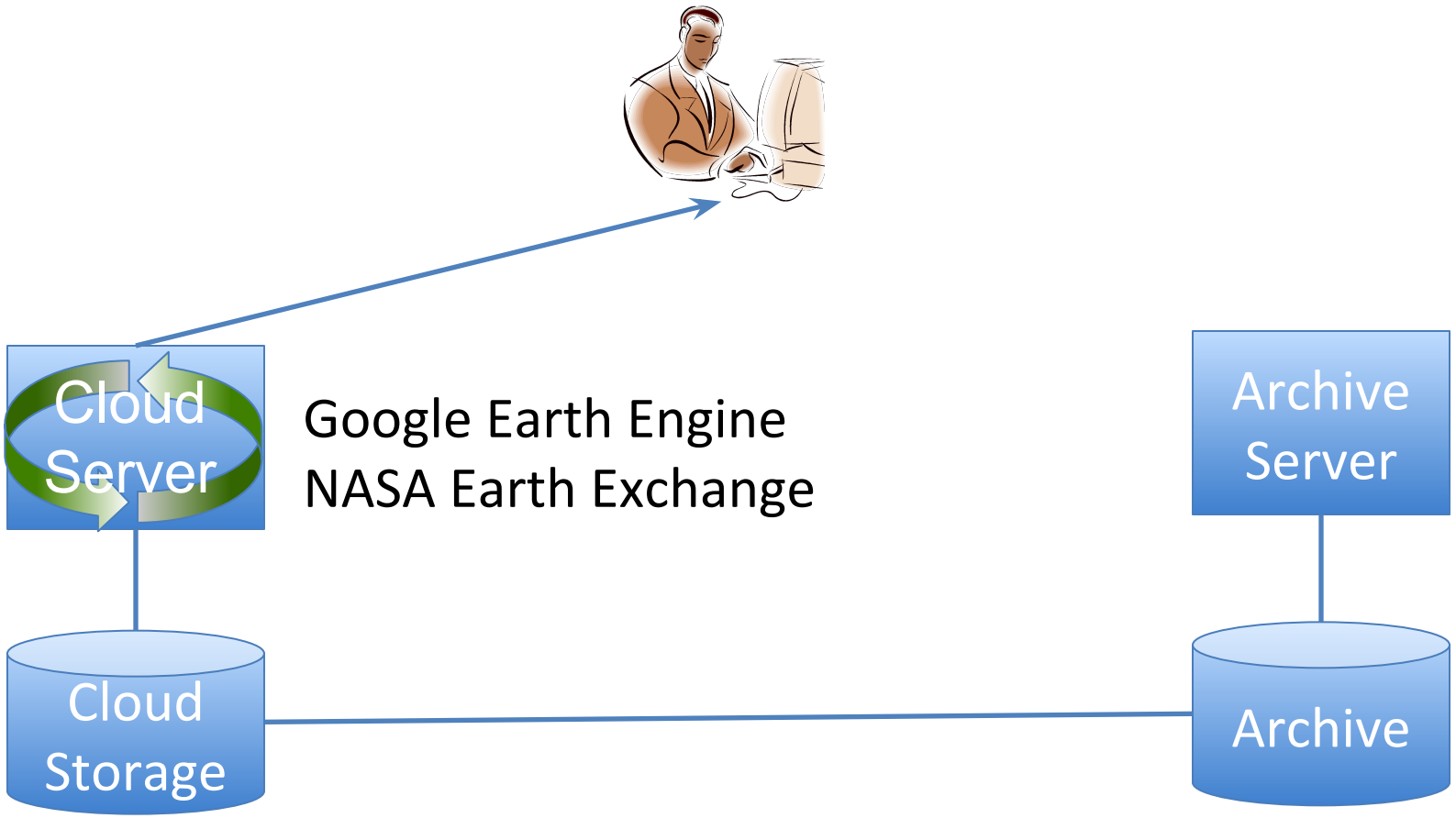
GrADS Data Server
ArcGIS for Server

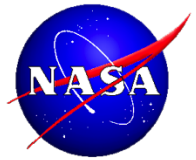


“Close To” = Near Archive



“Close To” = Near Processing





“more analysis closer to the data”

“The Data”

Suitable Data Form	Processing Technologies
Original Data as Archived	GrADS Data Server ArcIMS for Server
Groomed Data (reformatted, annotated)	Earth System Grid Giovanni
Reorganized Data	Google Earth Engine SciDB MapReduce

What's Next?

Collect More Science Use Cases

Prototype Cloud Analysis and Storage

Cloud Server

Cloud Storage

Near-Archive Server

Build Out Analysis Support Capabilities

Archive Server

Archive