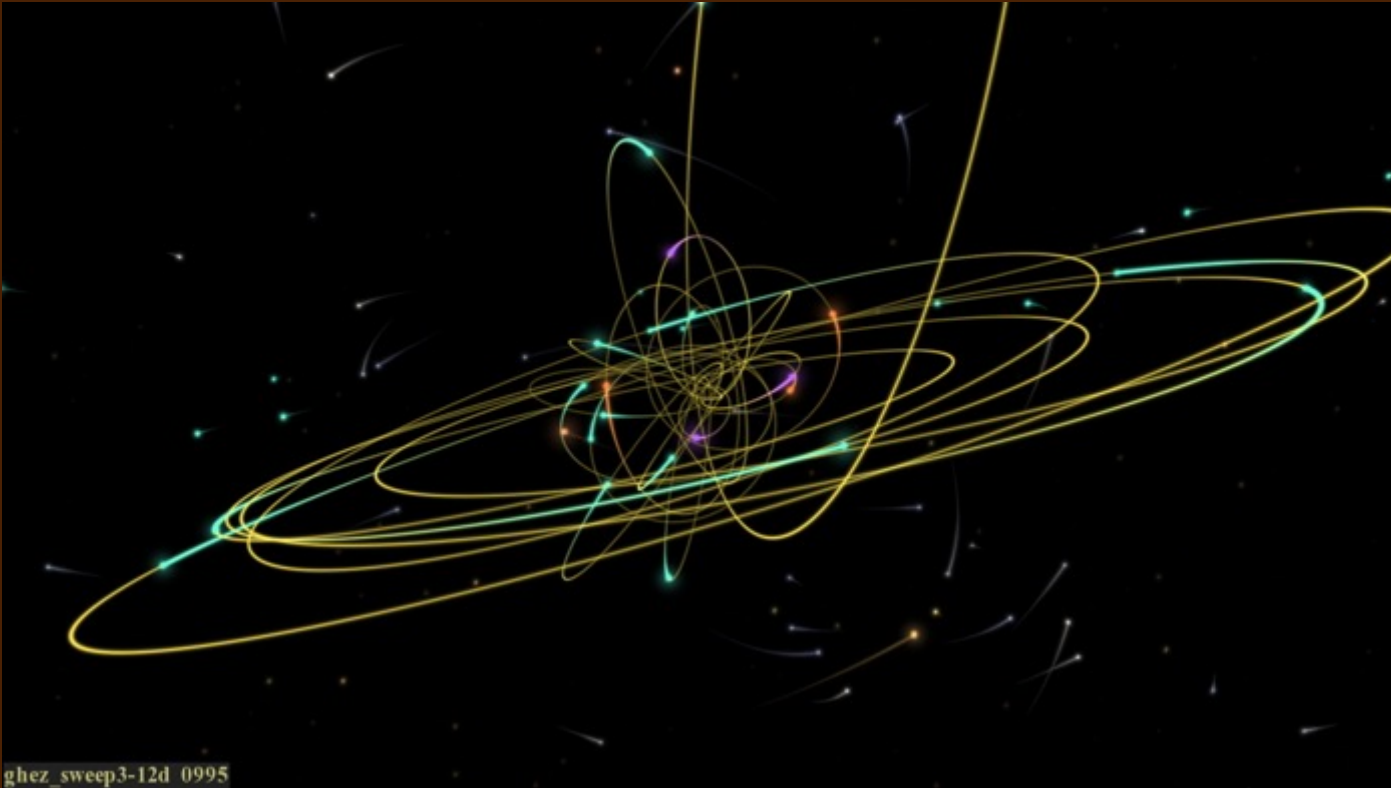# Stuart Levy

programmer, systems person

some background in

physics, astronomy, math

I like collaborating with scientists
Astronomy & Physics
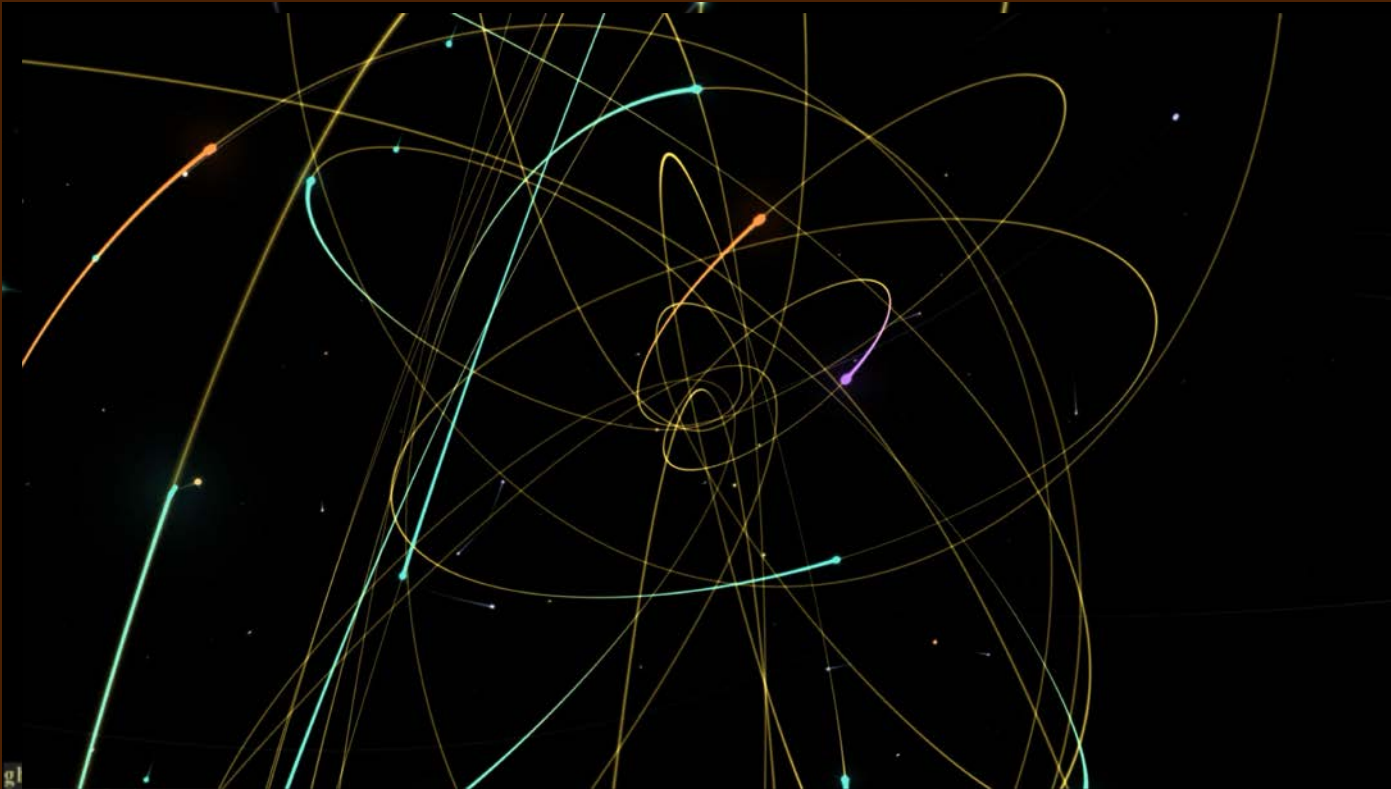
Stuart Levy – AVL
8/26/2020

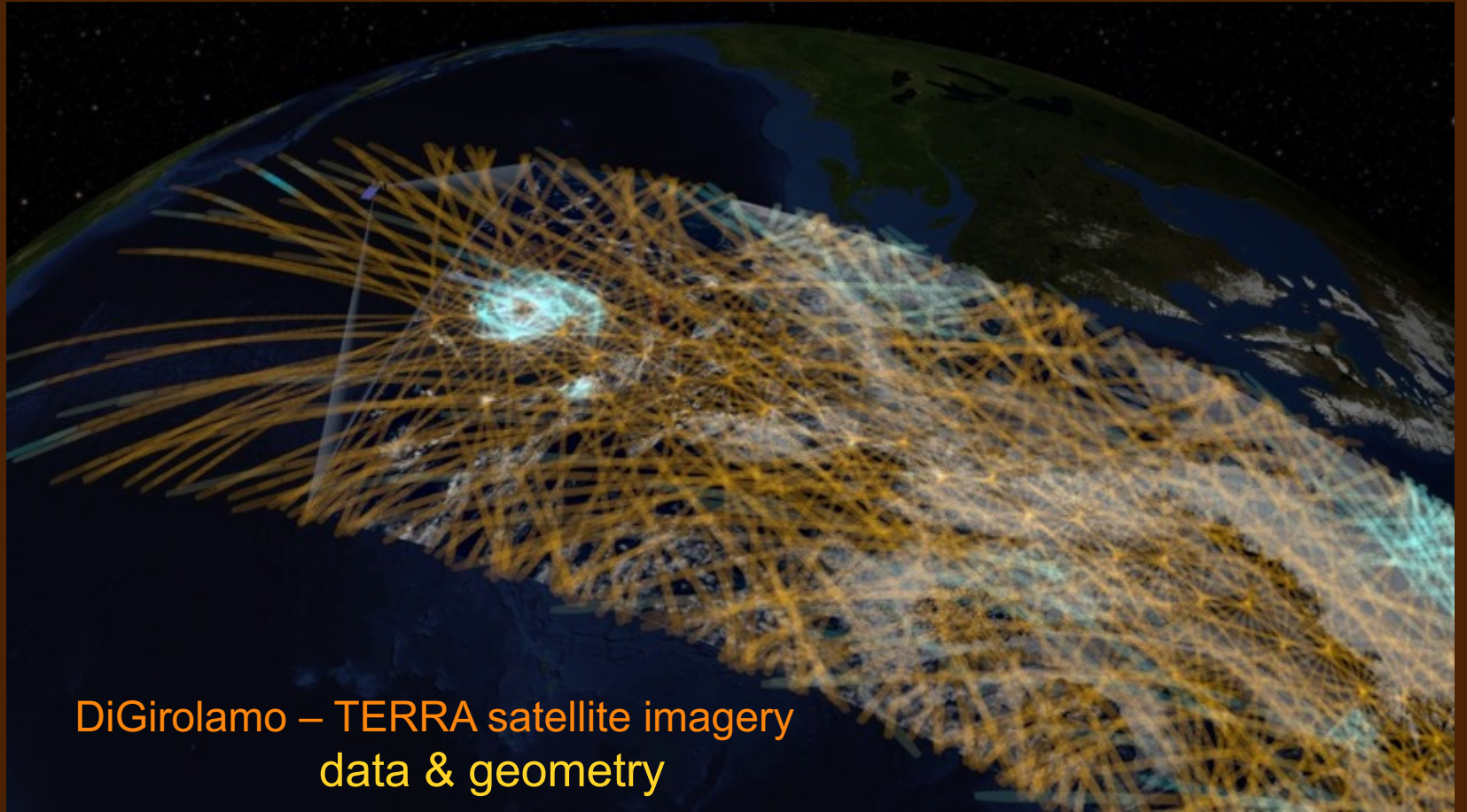Andrea Ghez – stars orbiting Milky Way central black hole

Astronomy & Physics
I like collaborating with scientists

Stuart Levy – AVL
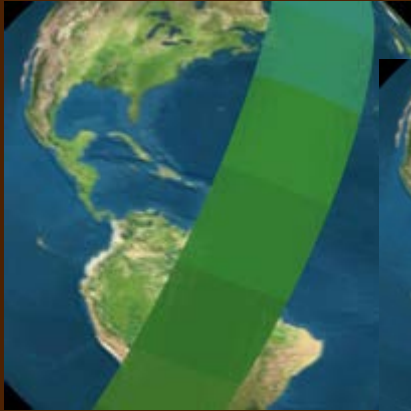8/26/2020

Andrea Ghez – stars orbiting Milky Way central black hole

… collaborating with scientists …

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DiGirolamo – TERRA satellite imagery
data & geometry
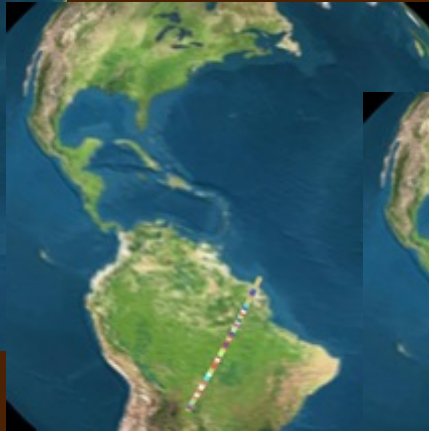
Math
(3-D geometry!)

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MODIS

MISR

ASTER

MOPITT

CERES

System architecture
(what limits HDF access speed?)

DiGirolamo – TERRA satellite imagery
data & geometry

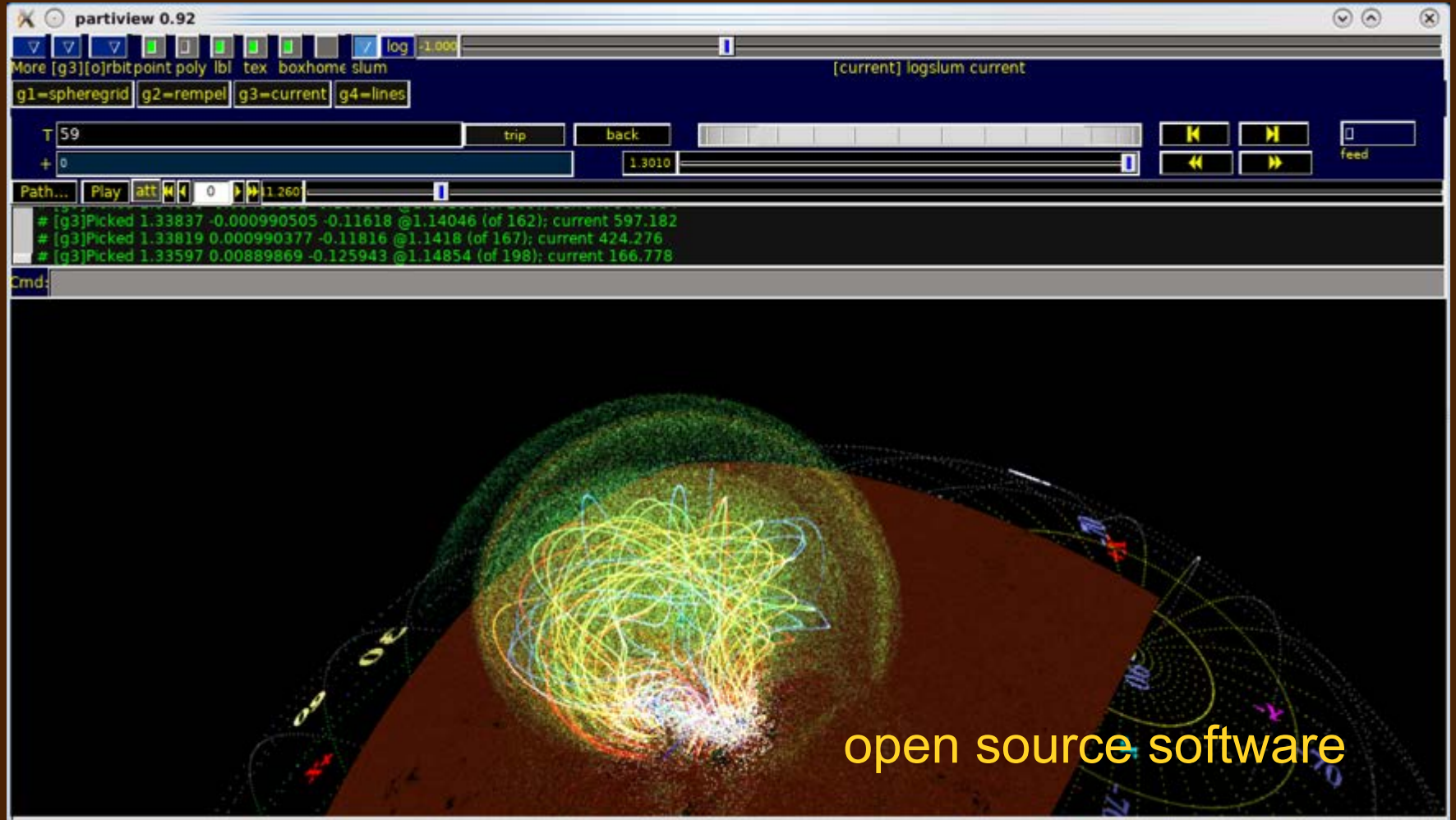DiGirolamo – TERRA satellite imagery
data & geometry

System architecture

Stuart Levy – AVL
8/26/2020

4K stereo movieplayer
streaming I/O → graphics

Interactive 3-D tools – partiview

Stuart Levy – AVL
8/26/2020

open source software

Interactive 3-D tools – partiview

Stuart Levy – AVL
8/26/2020
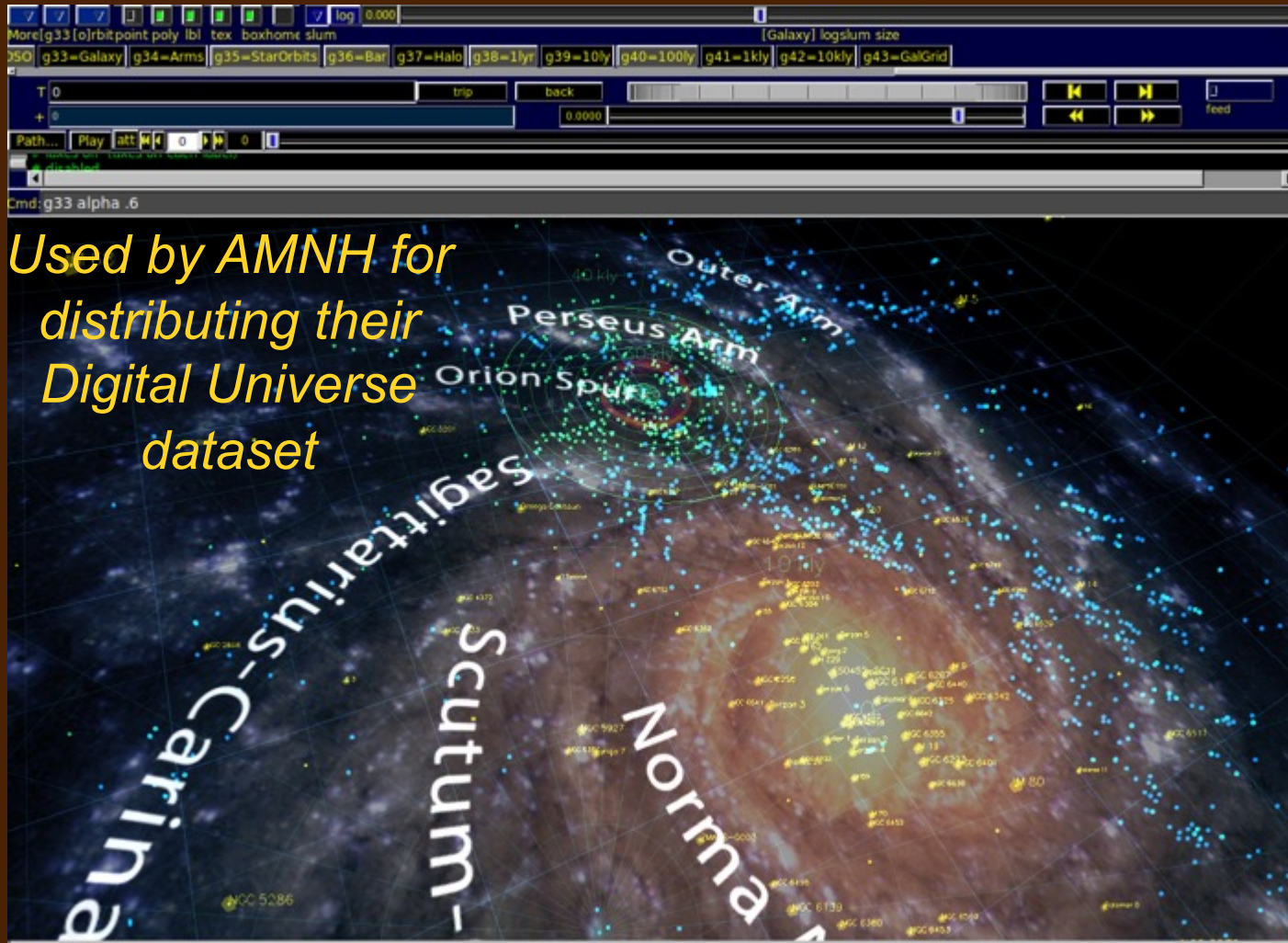
Used by AMNH for distributing their Digital Universe dataset

Interactive 3-D tools

Math for precision 3-D

Approaching a planet 500 ly away
in Virtual Director

Software integration

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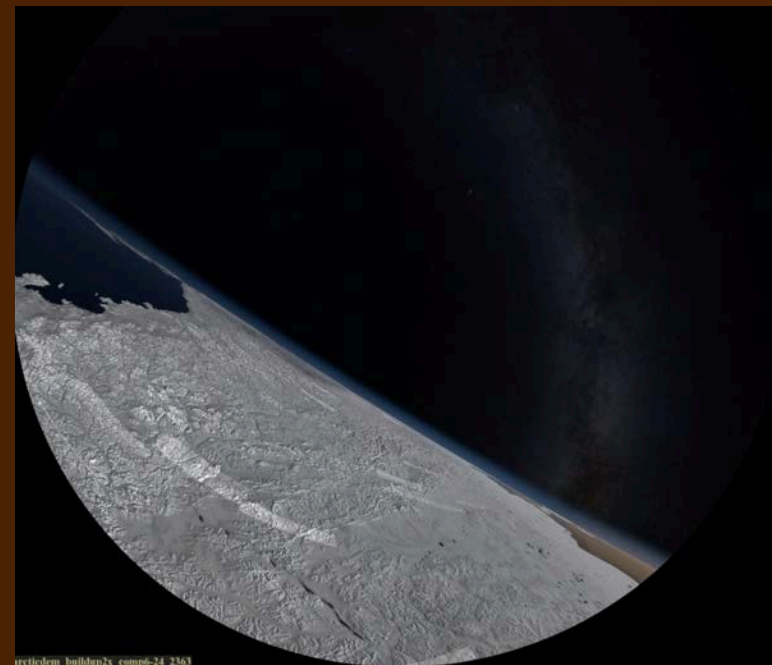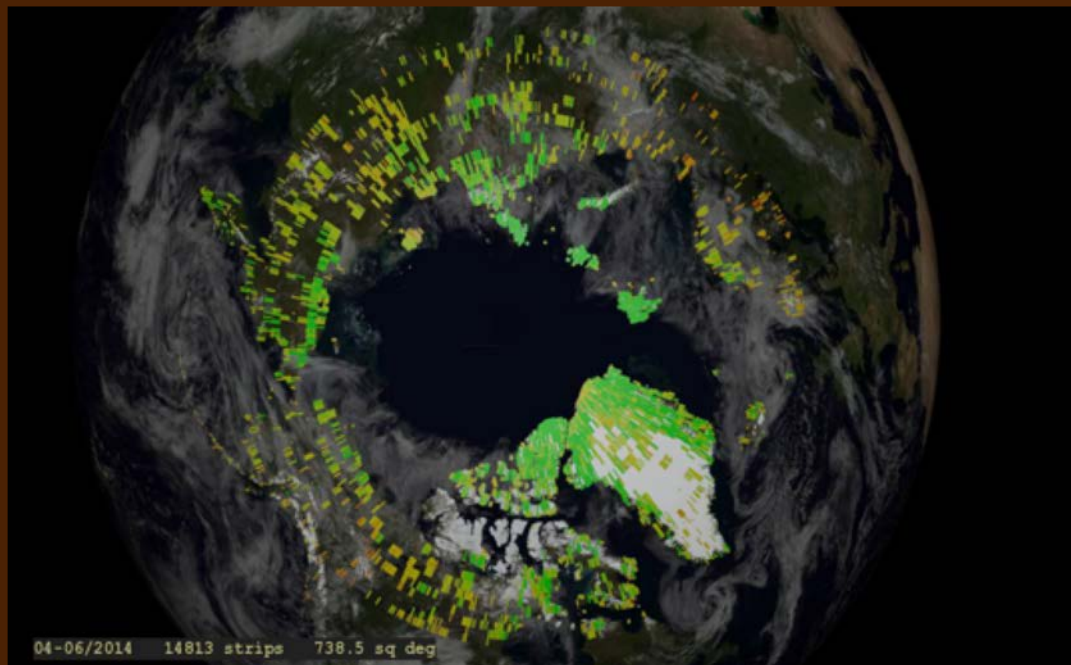8/26/2020

Virtual → TCBG's
Director   VMD

Software integration
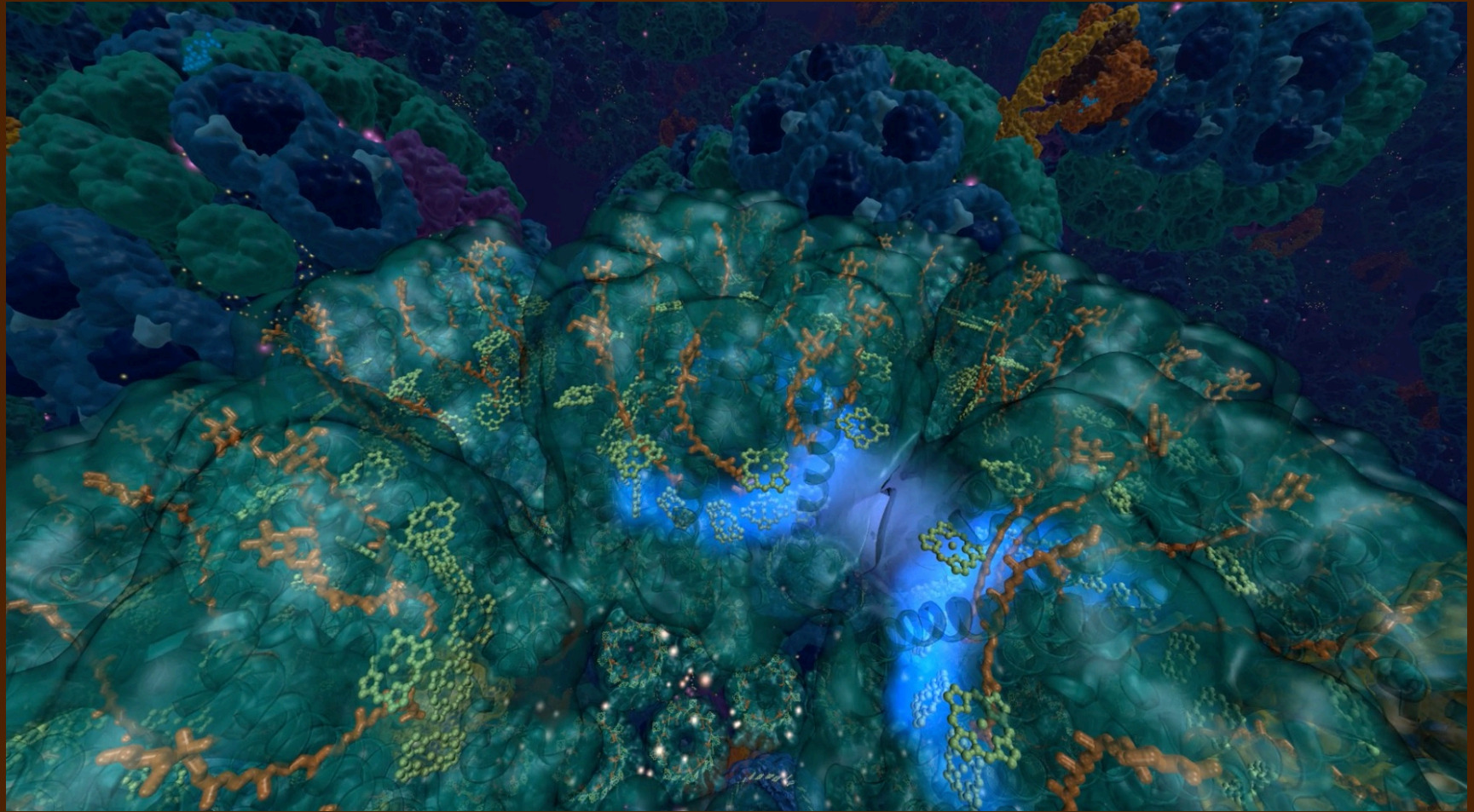
Turning VMD into a graphical puppet for AJ to control from Houdini
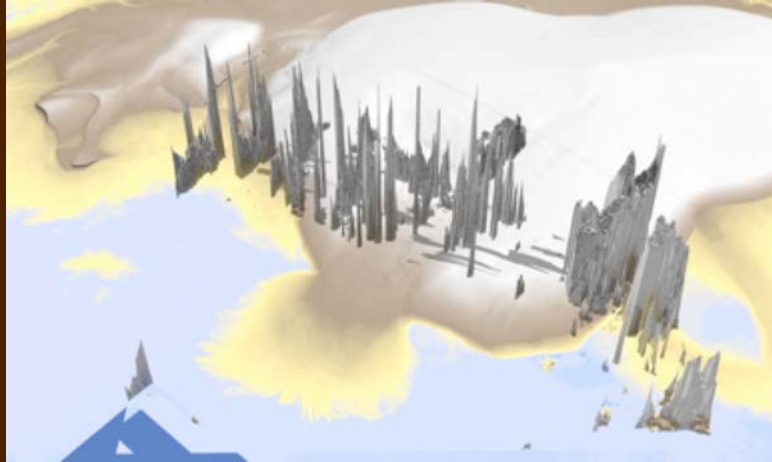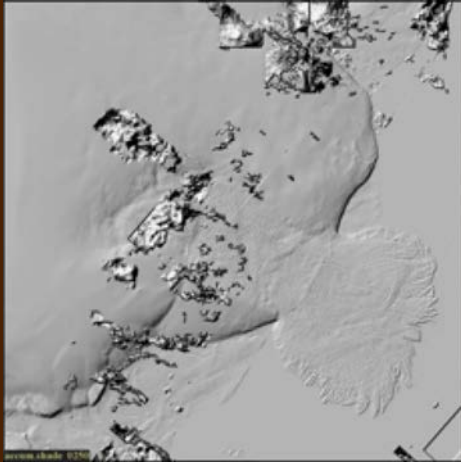
"Atlas of a Changing Earth"

Stuart Levy – AVL
8/26/2020

Featuring large-scale satellite altitude-mapping (DEM) data
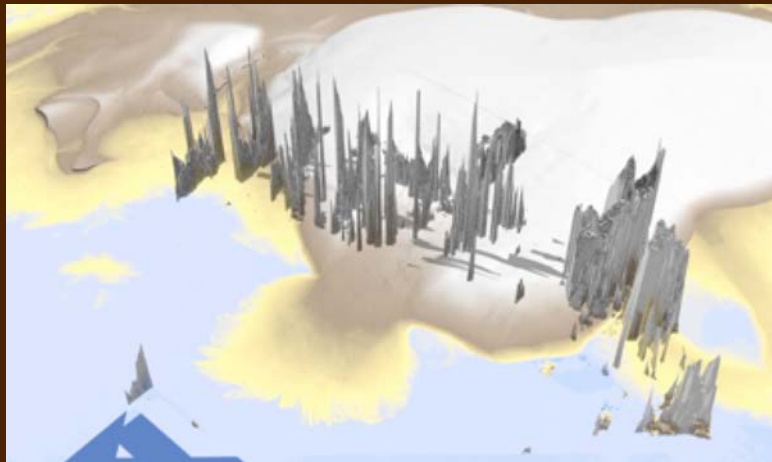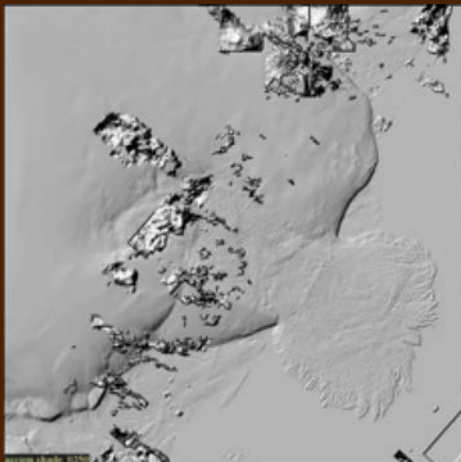
"Atlas of a Changing Earth"

Stuart Levy – AVL
8/26/2020

Visualizing time-evolution of the landscape

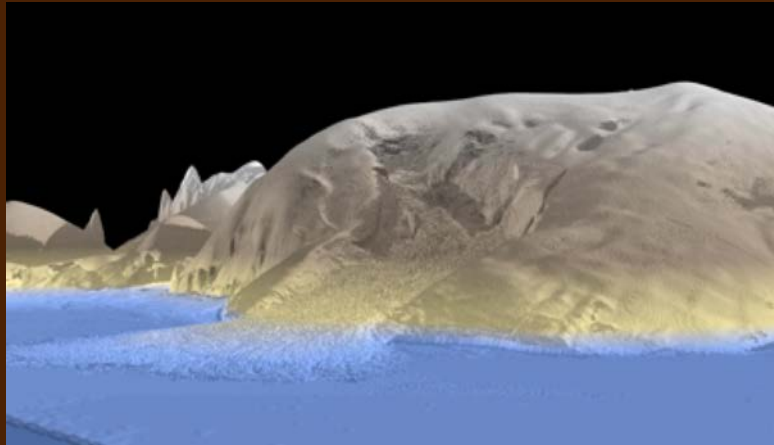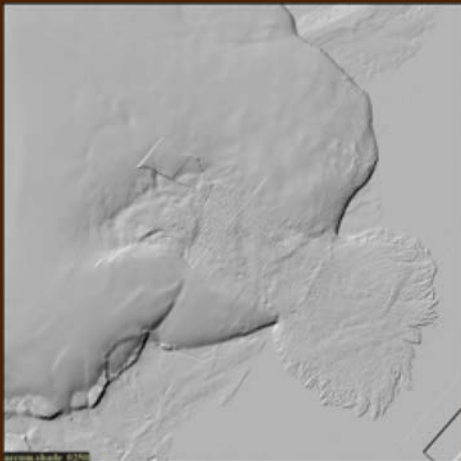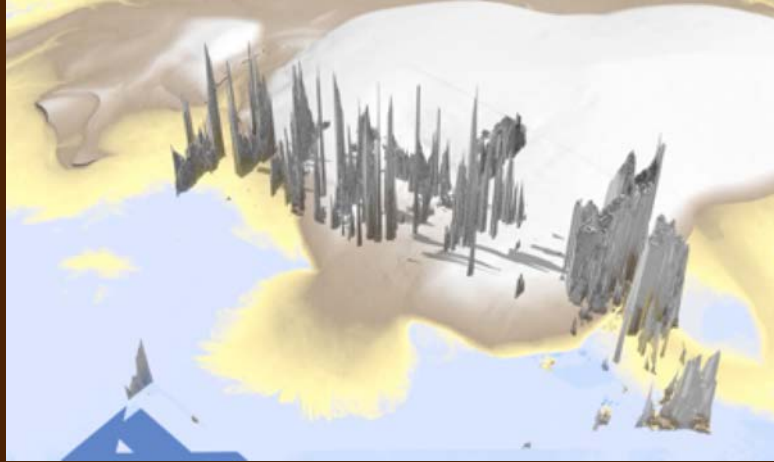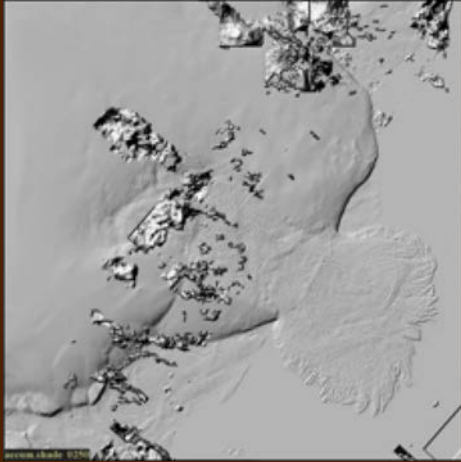# "Atlas of a Changing Earth"

Stuart Levy – AVL
8/26/2020

Visualizing time-evolution of the landscape

satellite DEM observations
plagued by clouds and misalignments

Group effort to identify/mask/align ...

"Atlas of a Changing Earth"
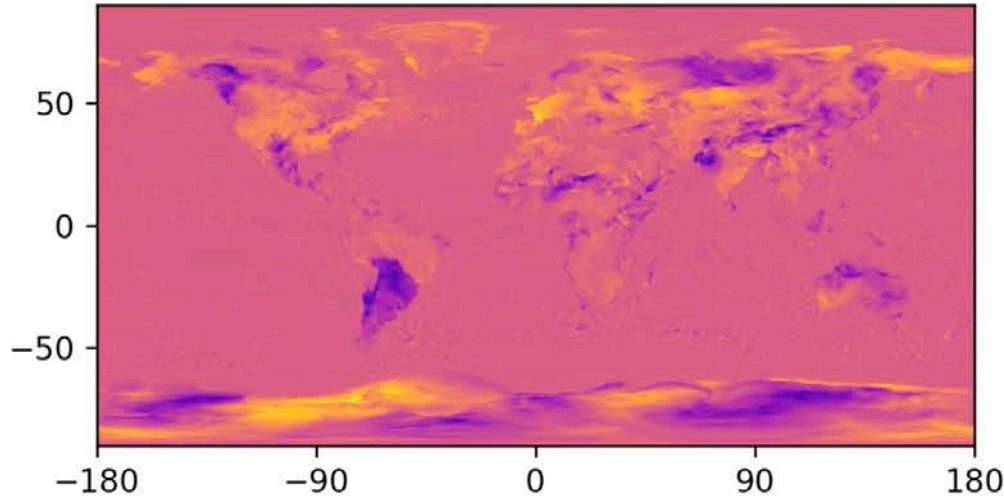
Stuart Levy – AVL
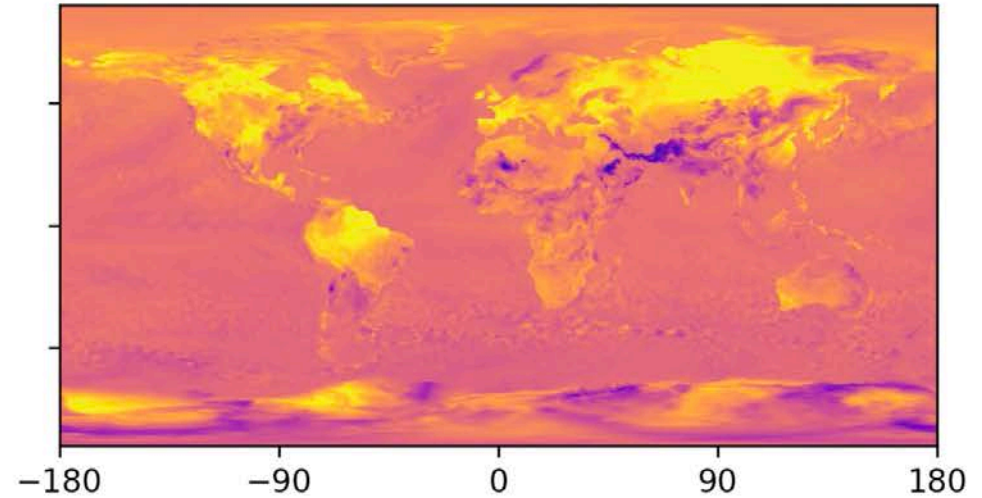8/26/2020

Visualizing what?

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8/26/2020

maxTS 2000 vs 2100 northern summer - diff from per-point NSummer-year-2000 median ~ 08/06

Normalization to show "How different is the future from the present?"