Status of Generic Mapping Tools (GMT) – October 5, 2015

What is GMT?
GMT is an open source collection of about 80 command-line tools for manipulating geographic and Cartesian data sets (including filtering, trend fitting, gridding, projecting, etc.) and producing PostScript illustrations ranging from simple x–y plots via contour maps to artificially illuminated surfaces and 3D perspective views; the GMT supplements add another 40 more specialized and discipline-specific tools.

Who uses GMT?
GMT is used by scientists all over the world to make publication-quality maps and plots. The community includes more than 25,000 individual users and the GMT web site has more than 20,000 visits per month and roughly 2000 downloads per month [*Wessel et al*.,EOS, 2013]. Google Scholar shows 11,500 citations from journal articles but many authors cite GMT in the acknowledgements or provide no citation or acknowledgement. (I'm guilty of this.)

Who are the developers and how are they supported?
1. Paul Wessel – University of Hawaii
    a. NSF/OCE/MGG grant for 2010-2015 was on the order of $50k/year.
    b. EAR/Geoinformatics grant for 2013–2016 is $40k/year
    c. EarthCube Proposal declined
2. Joaquim Luis – University of Algarve – part time project with no support
3. Florian Wobbe – Alfred Wegner Institute – part time project with no support
4. Remko Scharroo – EUMETSAT- part time project with no support
5. Walter H. F. Smith – no longer active – NOAA Employee

Transformative and Operational Project that Rely on GMT
MB_System – Transformed the way scientists use multibeam sonar data
GMTSAR – Uses GMT for precise geodesy, coordinate transformations, and mapping.
UNAVCO – GPS Time Series analysis and plots? (looks like GMT)
National Weather Service and the Pacific Tsunami Warning Center
USGS Earthquake Center – Shakemap, Tectonic Summary, Earthquake Posters, ...

Uncertain Future
NSF OCE wants to cut funding for GMT because a wider community should share the burden.
Walter Smith no longer contributes to GMT.
GMT is a part time activity for other authors.

Examples Related to UNAVCO
GAGE Proposal ~3/4 of the figures in Section 2
Kreemer Strain Rate Analysis – Uses GMT for all figures [G-Cubed, 2014]
Grand Challenges in Geodesy (25-Y, 11-N)
Future Facilities Report (non photo) (8-Y, 5-N)

What can we do?
Increase level of awareness of science community for GMT.
Suggest license fee model?
Move GMT into CIG (~$1,000k/yr.)?
Encourage Europeans to take responsibility for GMT