

GMT Community Meeting Notes 2022

DON'T FORGET TO START RECORDING ;-)

2022-08-17

Participants (add your name):

- Joaquim Luis
- Paul Wessel
- Dongdong Tian
- Claus-Peter Rueckemann
- Federico Esteban
- Wei Ji Leong
- Max Jones
- Remko Scharroo
- Yvonne Frohlich
- Walter Smith
- André Belem

Preliminary Agenda:

1. New paid C developer Roger Davis [SOEST] now working on GMT on a trial basis
 - 1.1 Onboarding,
 - 1.2 Long option implementation (10 modules plus common options; next open up for help with doing the rest)
 - 1.3 Next steps
2. Updates to remote data set (and how to improve process)
 - 2.1 GEBCO 2022
 - 2.2 Sandwell FAA/VGG)
3. GMT Summits 2023
 - 3.1 Need to spend USD 10k before June on developers
 - 3.1 Plan weeklong summit at Scripps summer 2023.
 - 3.2 Joint GMT/PyGMT or separate?
4. Outlook for GMT 6.5
5. GMT data server home long-term.
6. Paul moving to Norway mid-October

Notes:

1. Paul has been on research sabbatical, not GMT sabbatical, so development has been slow. Tomorrow is his last day in Oxford, going to New York/Lamont after, and then Hawaii, after that will go to Oslo mid-October. Still gonna be Professor at UH at Oslo somehow? Need approval from provost, but will see how that goes.
2. Max has moved on to Carbonplan, and Paul hired new dev Roger, seasoned C programmer, gonna see how it works out, not full time
 - a. Onboarding to get used to git-based collaboration, and also figure out how to edit people's C code.
 - b. Started him on the long-options implementation, to minimize supervision from Paul. Gonna have a table that translates long versions to short versions and pass it to the regular parser. Alternative is to rewrite 100+ parsers which is out of question. Last year, there was some work on the common options, but still a lot more. Some back and forth though as getting issues with consistency. Have also found a few issues along the way, working through those too.
 - c. Will use Julia or PyGMT long options if written already, unless it doesn't make sense.
 - d. Remko: What to do with allowing a space after the long option (--long-option arg)? Something about the GetOps package? Currently an equal is needed (--long-option=arg), a keyword=arg pair. Some more technical discussion might be needed.
 - e. On the hyphen, underscore, and camelcase. Just getting Roger to test the capabilities first and then can decide after on having a clean solution.
 - f. Joaquim suggested to have an empty table first, and then people can fill it in afterwards.
3. Remote data sets
 - a. Got some updates, but the changes are not notified to us automatically. Data refresh also done in an ad-hoc manner by Paul and Max before.
 - b. Some are getting updated every few months, but it might be better to update the GMT remote data sets annually instead?
 - c. Federico was interested in updating the remote data files too, gonna see how far he can go with the documentation. Gonna get authorization to the server first and then can improve the process and/or documentation. Data processing scripts are mostly done, more just putting things on the server that is not automated.
 - d. Andre: Any plans to add planetary datasets? Didn't get funding from NASA for it, but if someone wants to do it, can enable it.
 - e. Copernicus DEM download might need some user registration, need to think about how to handle that.
4. GMT Summits
 - a. About 10k that will expire Jul 2023. Needs to be spent on travel or stuff
 - b. Main GMT grant will live on for about 3 more years, 50k to spend on development stuff
 - c. Usually like to have the summit in Scripps, but could have it in Europe since Paul will be there.

- d. Do we have one summit for everyone, or have mini-summits for the GMT wrappers too?
- 5. GMT 6.5
 - a. Was gonna try to have minor release every 6 months. Last one was June 18th. But given Paul's schedule, maybe an early 2023 GMT 6.5 might be more realistic
 - b. Max: When would the long option implementation beta version be done? May have a beta implementation first, then document afterwards when more users have tried it and things look more stable
 - c. Is there going to be long-option only options without a short option version? May also decide to split a module like plot into different modules that does only plotting lines, or points.
 - d. GMT 6.5 might not be the version with a stable long-option, probably gonna be after that.
 - e. Joaquim: Continuous releases. Can we have an official bundle build on Linux that works for all distributions, like we have on macOS. Some option like cpack? Might have a very huge binary bundle, but a bit more complicated to make it work on every distribution.
- 6. GMT Oceania Server
 - a. Hoping that there will be a long-term host for this not in Hawaii
 - b. Store it at the organization/institution from the merger of IRIS and UNAVCO, or do it in Europe.
 - c. Need something that can work for decades
- 7. Roundtable
 - a. Remko: Have been on holiday. In GMT, using more often, not at EUMETSAT? Doing a bit more science nowadays, and using GMT, and finding stuff that would like to change. Liking the new GitHub way, and the GMT 6 modern mode. Thinking the next GMT Summit might be where the next big version change happens, and include not only senior ones but junior ones, to decide the next 5 years.
 - b. Claus-Peter: Using GMT for about 12 years now. Written lots of long programs, nice to see backwards compatibility working, even on GMT 6.4. Have stored output figures of old versions to compare to new versions, so far things from years ago still work.
 - i. Option for gmtselect to keep the line lengths of the input. If concatenate data file, then gmtselect filters the line length, 4096 bytes only. Would be nice not to have limitation of line length.
 - ii. Problem is that if we increase it for gmtselect, will increase it for other modules as well.
 - c. Joaquim: Got some gsconvert stuff to sort out. Has everything needed in
 - d. Wei Ji: Just picking up some maintenance stuff on PyGMT again this week, been busy with an intensive program for the past 2 months.
 - e. Max: Since last community meeting, EGU short course and SciPy talk on Youtube, lots of good reviews, in particular the great backwards compatibility GMT has.

- f. Andre: User of GMT since 1994, learned GMT on a ship with no internet connection. Was Matlab user and anti-python before, but because of students, have now switched to PyGMT
- g. Dongdong: Not sure if can join summit due to passport and quarantine issues. For PyGMT, had release in early July. Slowly trying to update unit tests to work on compatibility with GMT 6.4, been working on documentation, and writing some proposals for future of PyGMT.
- h. Federico: Working on some mathematical data, and learning some GMTSAR, and some stuff on DCW? Zenodo repository. GSSHG? Zenodo repository for the dcw-gmt (2.1.1) dataset: <https://zenodo.org/record/6823057>
- i. Yvonne: PhD Student started using GMT in 2017 during Bachelors, now using PyGMT with Obspy, a lot more readable. Been actively contributing to PyGMT on GitHub!
- j. Walter: Just busy with low level radar altimeter stuff. Brief history reminisce, discussion on how GMT started on compiling local ship track surveys into global dataset, and we're still doing that 30+ years on.

2022-04-07

Participants (add your name):

- Joaquim Luis
- Paul Wessel
- Dongdong Tian
- Claus-Peter Rueckemann
- John Robbins
- Federico Esteban
- Wei Ji Leong
- Meghan Jones

Preliminary Agenda

- GMT update
- GMT 6.4.0 release
- GMT.jl, GMT/MEX, and PyGMT updates
- GMT summit plans
- UNAVCO short course
- Open discussion

Notes:

1. GMT update
 - a. Bug fixes
 - b. Docs updates
 - c. No more vercel
 - d. Lots of stale issues (long options, refactoring)
 - e. New potential module and features
2. 6.4 release
 - a. Critical to fix regression - regression on map embellishment
 - b. Other bugs discovered since 6.3.0
 - i. Would be good to revisit -JQ bug
(<https://github.com/GenericMappingTools/gmt/issues/4335>)
 - c. Move forward on texture shading PR
(<https://github.com/GenericMappingTools/gmt/pull/5138>) and cmocean cpt
feature (<https://github.com/GenericMappingTools/gmt/pull/6446>)
3. GMT wrapper updates
 - a. GMT/MEX
 - i. No changes in a long time
 - ii. Would be nice to have the macOS bundle to be built like the windows bundle so that the user has everything they need apart from MATLAB to run it
 1. Relates to rpath in CMake
 2. Check out
http://fct-gmt.ualg.pt/tmp/gmt-6.3.0_2021.10.27-x86_64.dmg to see if it works better
 - b. GMT.jl
 - i. All modules except grdmath and gmtmath are wrapped (not worth wrapping those two)
 - ii. Some supplement modules are wrapped
 - iii. Many gdal tools and functions are wrappers
 - iv. Some other useful functions (e.g., pcolor)
 - v. Many modules do not have the expanded documentation
 1. All have long options, but they are not all expanded
 - vi. Discussion about publication as a way of getting interest and help
 - c. PyGMT
 - i. SciPy abstract accepted
 - ii. V0.6.0 in last month
 - iii. Patch release for bugs coming soon
 - iv. Two modules in the last release
 - v. Been focusing refactoring some modules
 - vi. Short course at EGU (repo open for asynchronous work) - prerecorded 1.5 hour short course
 1. Could record a slightly different version for YouTube

4. GMT Summit plans
 - a. Money in GMT grants in meeting developer summits, but haven't used it due to COVID
 - b. Some issues with location - need to decide when, who can attend, and where
 - i. Early June - August 20 (Paul is available)
 - ii. Open an issue to discuss the issue
5. UNAVCO short course
 - a. Pre-record lectures and have synchronous sessions be more interactive
 - b. Firm up deadline for pre-recorded lectures in early June
6. Open discussion
 - a. Discussion about post-doc
 - i. Tomorrow is Meghan's last day
 - ii. Used about 18 months out of 36 months of funding
 - iii. Post-doc searches take a long time
 - iv. Could search for another post-doc or could hire a paid programmer for specific tasks
 - v. Send specific thoughts to Paul over email
 - b. AGU 2022
 - i. Not planning to submit a workshop proposal, but there may be a contingent at AGU
 - c. Send feedback about time for community meetings (seems likely we'll keep this time)

2022-02-03

Participants (add your name):

Agenda:

1. **Status update on GMT development**
2. **Adding more colormap packages to GMT**
3. **Documentation for dcw collections**
4. **Remote dataset additions/updates**
 - a. **Announcement plans on Forum, Twitter, Instagram**
 - b. **Adapting gallery/animation scripts to use the new datasets**
5. **Open discussion**

Notes:

1. Status update on GMT development
 - a. DCW release 2.1.0 - new collections, bug fixes
 - b. New datasets added

- i. Question about geoid dataset - is it worth reaching out to people specializing in the production about various resolutions, etc.? Purpose is for quick, simple maps so likely won't provide more specific versions.
- c. New docs pages for [remote datasets](#) and [gmt examples](#)
- d. Migrated to dvc for managing test/docs images - smaller shallow clones
- e. GitHub statistics
 - i. Number of open issues (245) / PRs (20)
 - ii. 01/03/2022 - 02/03/2022 - 77 merged PRs, 25 closed issues, 17 new issues, 10 authors, 1026 files, 4,270 additions, 1,930 deletions
 - iii. 214 forks, 585 stars
- 2. Remote dataset additions/updates
 - a. Yes, we want to put announcements out.
 - b. Animated gif going through the animations - Paul is glad to help with creation
 - i. Paul will post on the forum, Meghan on twitter, and Federico on instagram
 - c. Paul is trying to extend the earth_relief beyond 60 N and S
 - d. Adapting gallery/animation scripts to use new datasets
 - i. Either add notes or add the new datasets to the gallery examples
 - ii. For example, some still use ETOPO data which should be updated to earth_relief
 - e. Discussion about postscript files in git repository
 - i. DVC is setup so we should not need to ever commit more postscript files to Git
 - ii. Meghan will migrate the rest of the test images to DVC
 - iii. Afterwards, we can look into the git rebase options
- 3. Documentation for DCW collections
 - a. 250 collections names for cities, islands, etc.
 - b. Current documentation on usage - <https://github.com/GenericMappingTools/dcw-gmt#usage>
 - c. Federico made a collection of plots for all the collection items
 - i. Where do we place these figures?

<https://github.com/GenericMappingTools/dcw-gmt/pull/31#issuecomment-1002733126>
 - ii. Need more information on the GMT docs with links to separate DCW collections
 - iii. Idea for an html table with a name and a polygon (using coast)
 - 1. Pick a handful of names and create a mockup of the page
 - 2. Create an issue about the documentation
 - iv. Include a disclaimer that GMT does not endorse the names or regions - [GEBCO example](#)
- 4. New colormaps
 - a. Remko opened an issue for the cmocean colormaps

<https://github.com/GenericMappingTools/gmt/issues/6284>
 - b. Discussion about scalability for future collections

- i. Store in directories e.g. cmocean/algea
- c. Do we want to add more formal support for cpt-city? E.g., expand cpt-city/cmap to get URL
- d. Ping the cmocean developer after adding the feature
- 5. Possible developer summit in Europe
- 6. Another UNAVCO short course this summer