



PROJECT TITLE

Bringing Magics Weather maps to Matplotlib

TEAM MEMBER

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MENTORS

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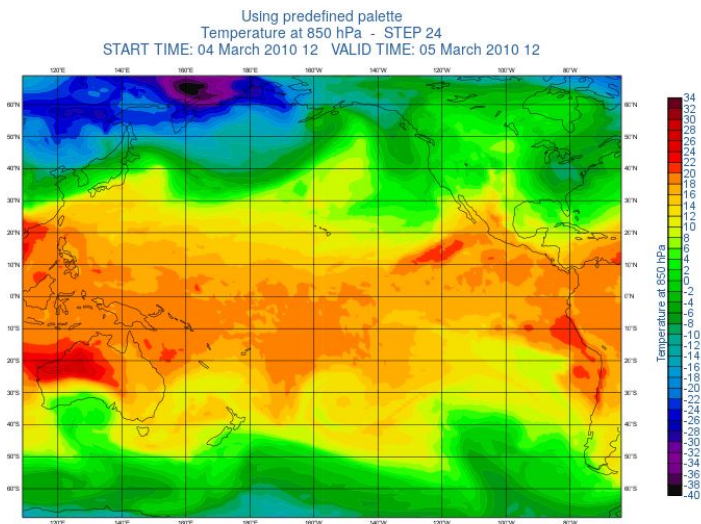
Outline

- Introduction
- Previous examples
- Motivation & Aim
- Deliverables
- Demo
- Conclusion

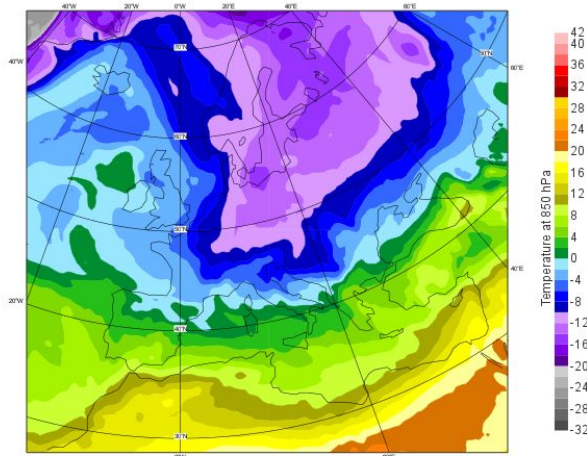


Introduction

- Magics is a meteorologically oriented graphical library written using C++, for visualising meteorological on different projections of the globe.



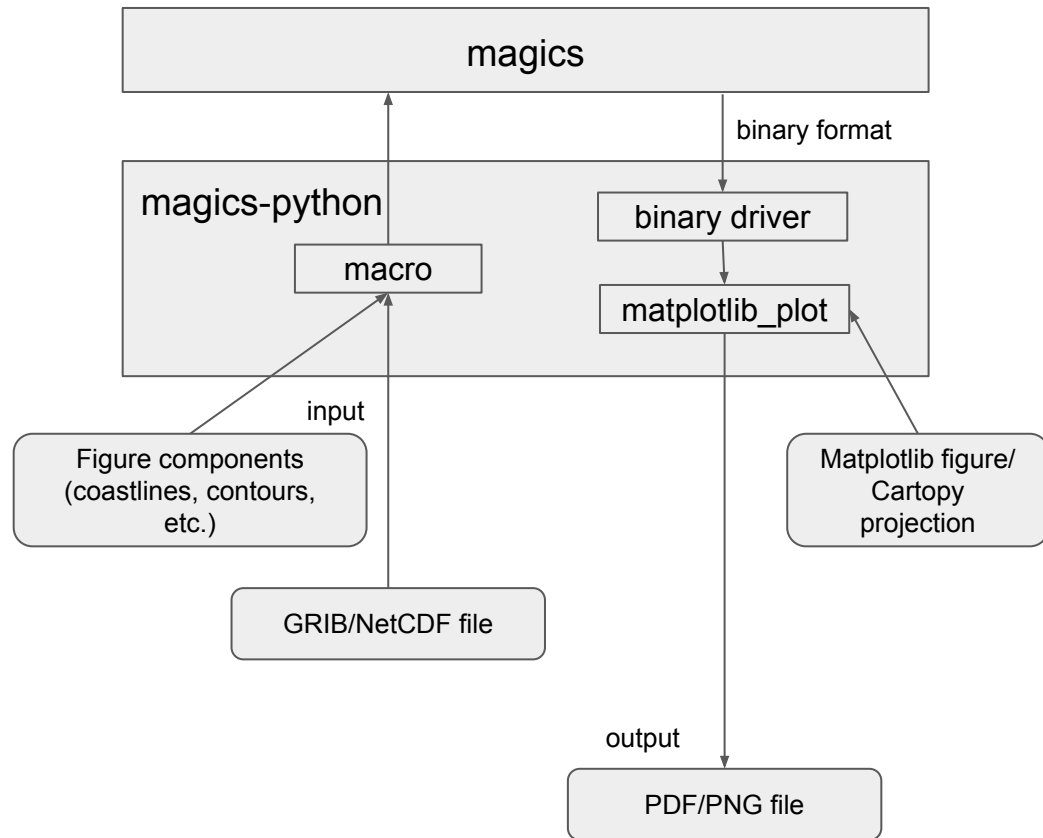
Using interval for selecting levels and list for colours
Temperature at 850 hPa - STEP 24
START TIME: 04 March 2010 12 VALID TIME: 05 March 2010 12





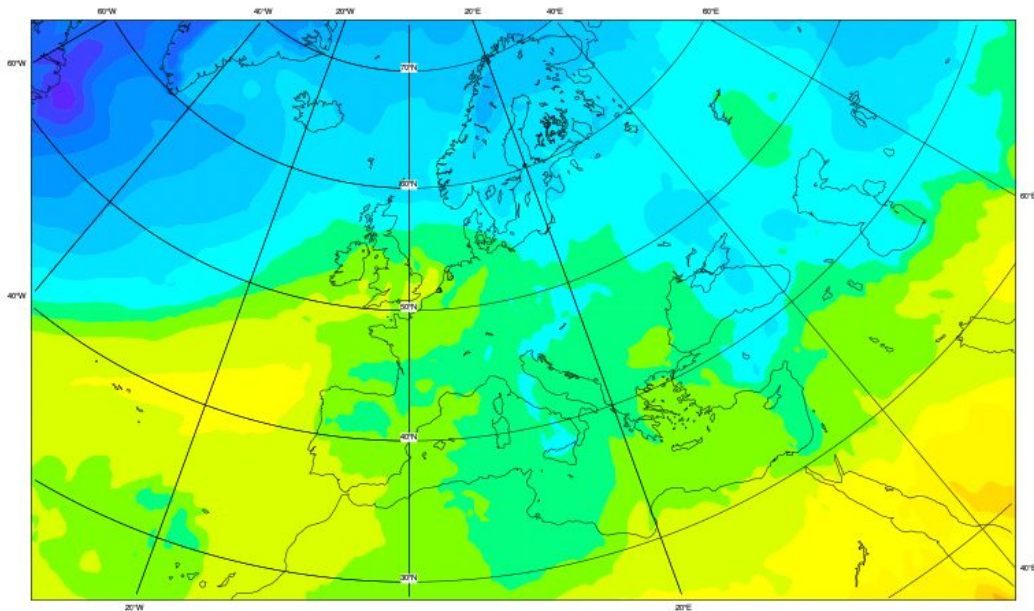
Introduction

- Magics-python was created to provide a python interface to magics

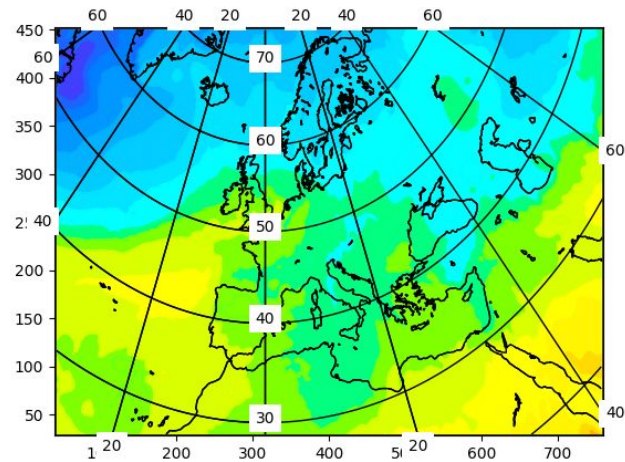




Previous examples



Magics



Magics-python



Motivation

- Utilise the power of matplotlib to make plots more customizable and interactive
- Provide an easy to use high-level python interface for users

Aim

- Extend the binary driver to convert output from binary format to matplotlib axes object
- Integrate magics with cartopy to provide flexibility

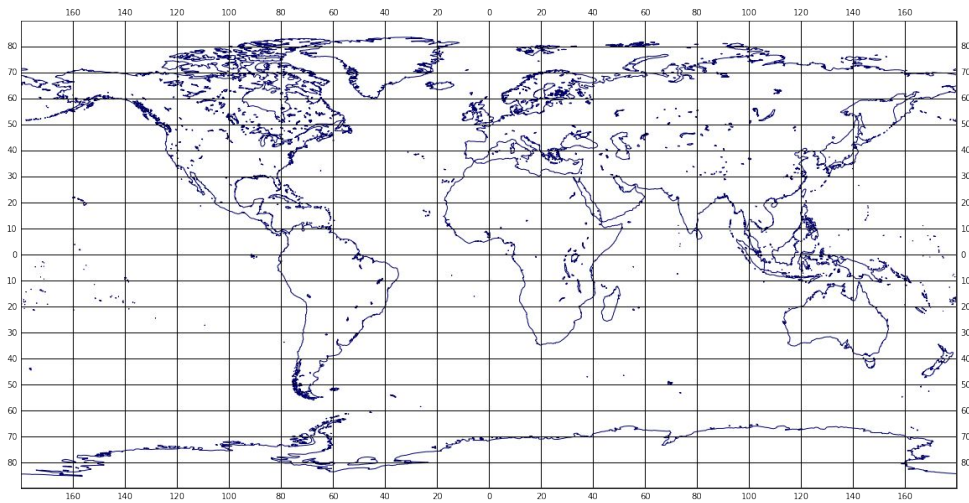


Deliverables

- Update documentation
- Make syntax more pythonic
- Improve Aspect ratio
- Improve text
- Improve setting plot limits
- Implement passing custom matplotlib axes
- Add colorbar: Discrete
- Add colorbar: Continuous
- Integrate Magics with cartopy



Demo

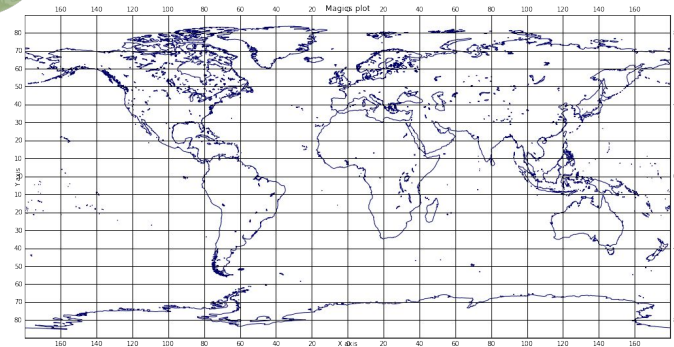


Magics 4 12 2 - alishdipani.Lenovo.ideapad-500-15ISK - alishdipani - Wed Jul 13 12:28:53 2022

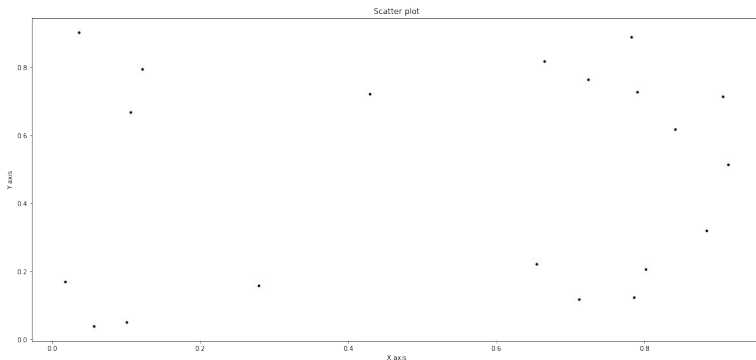
- Improve Aspect ratio
- Improve text
- Improve setting plot limits



Demo



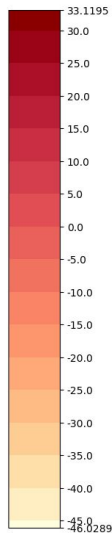
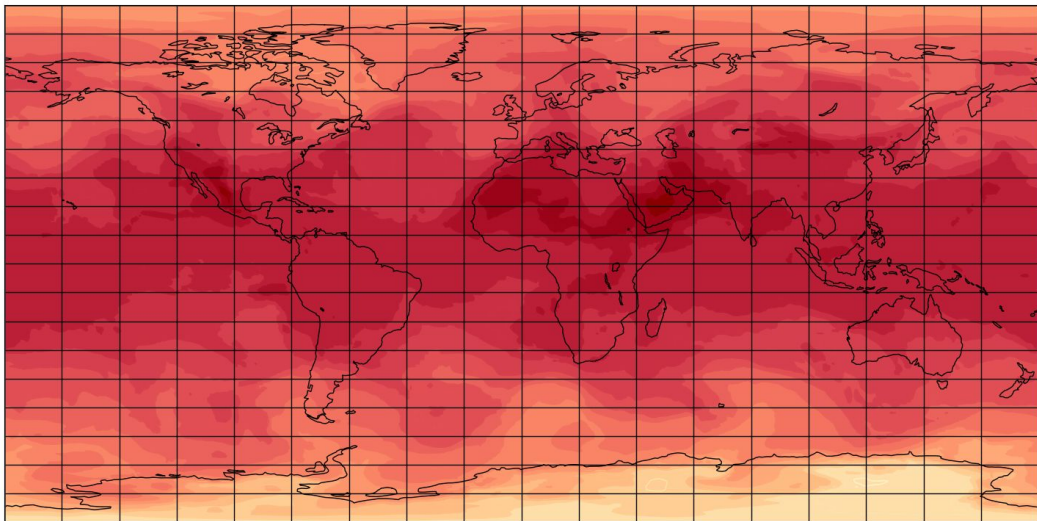
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Implement passing custom matplotlib axes



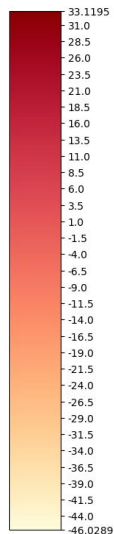
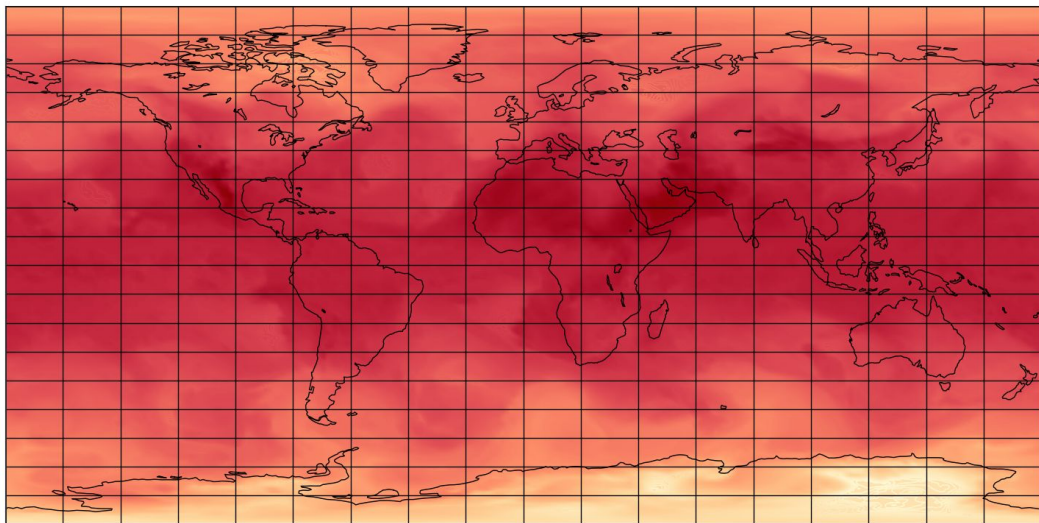
Demo



Add colorbar: Discrete



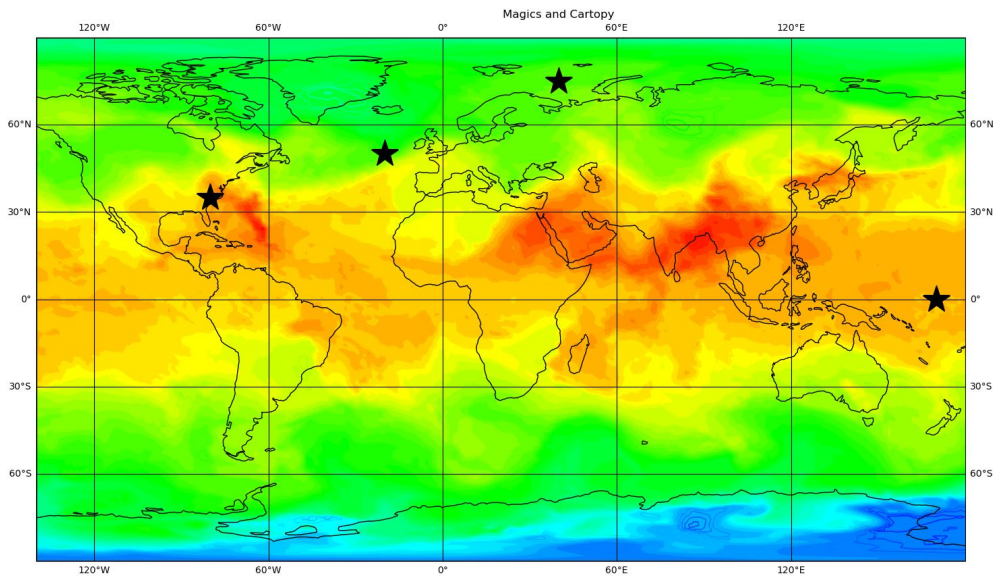
Demo



Add colorbar: Continuous



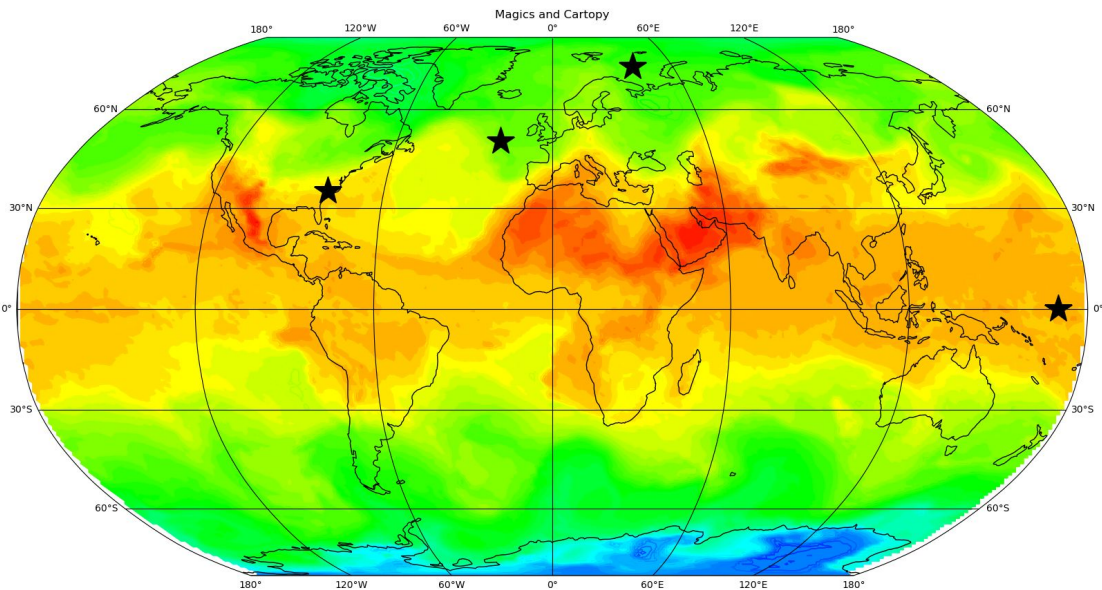
Demo



Integrate Magics with cartopy



Demo

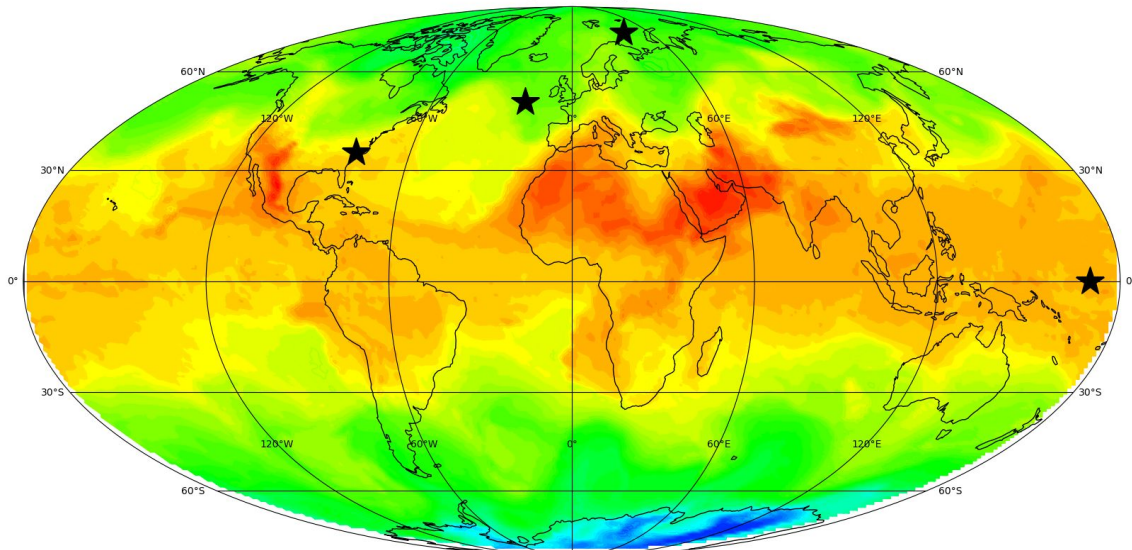


Integrate Magics with cartopy



Demo

Magics and Cartopy



Integrate Magics with cartopy



Conclusion

- Improved the python interface for magics
- Made magics figures fully customizable using matplotlib & cartopy
- Added documentation



Thank You!