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The Kepler mission has identified 3548 planetary candidates, each of which must be observed in follow-up studies (usually with ground-based telescopes) to confirm or deny the presence of an exoplanet. To date, 150 (4.2%) of these candidates have been observed and confirmed as exoplanets. Exoplanet follow-up and confirmation is limited by the amount of follow-up telescope time available. Currently, the thousands of candidates are prioritized to favor those that are small and reside in relatively cool or habitable zones.

We have applied the DEMUD data prioritization algorithm to instead prioritize planetary candidates by their "interestingness." DEMUD provides a diverse traversal of large data sets, iteratively selecting the next most surprising item (here, stellar light curve). DEMUD also highlights the specific features of each light curve that caused it to be classified as interesting. We report on the analysis of Kepler Q5 data, focusing on the top 25 candidates DEMUD recommends as high priority for follow-up observations. 21 of these have as yet received no observations. We also make the full prioritized list available to the community to guide future observing campaigns.