

Reliable Radii for M Dwarf Stars

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Why we need precise M dwarf radii

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Kepler



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Kepler



TESS



Get precise parameters for
a sample of nearby stars

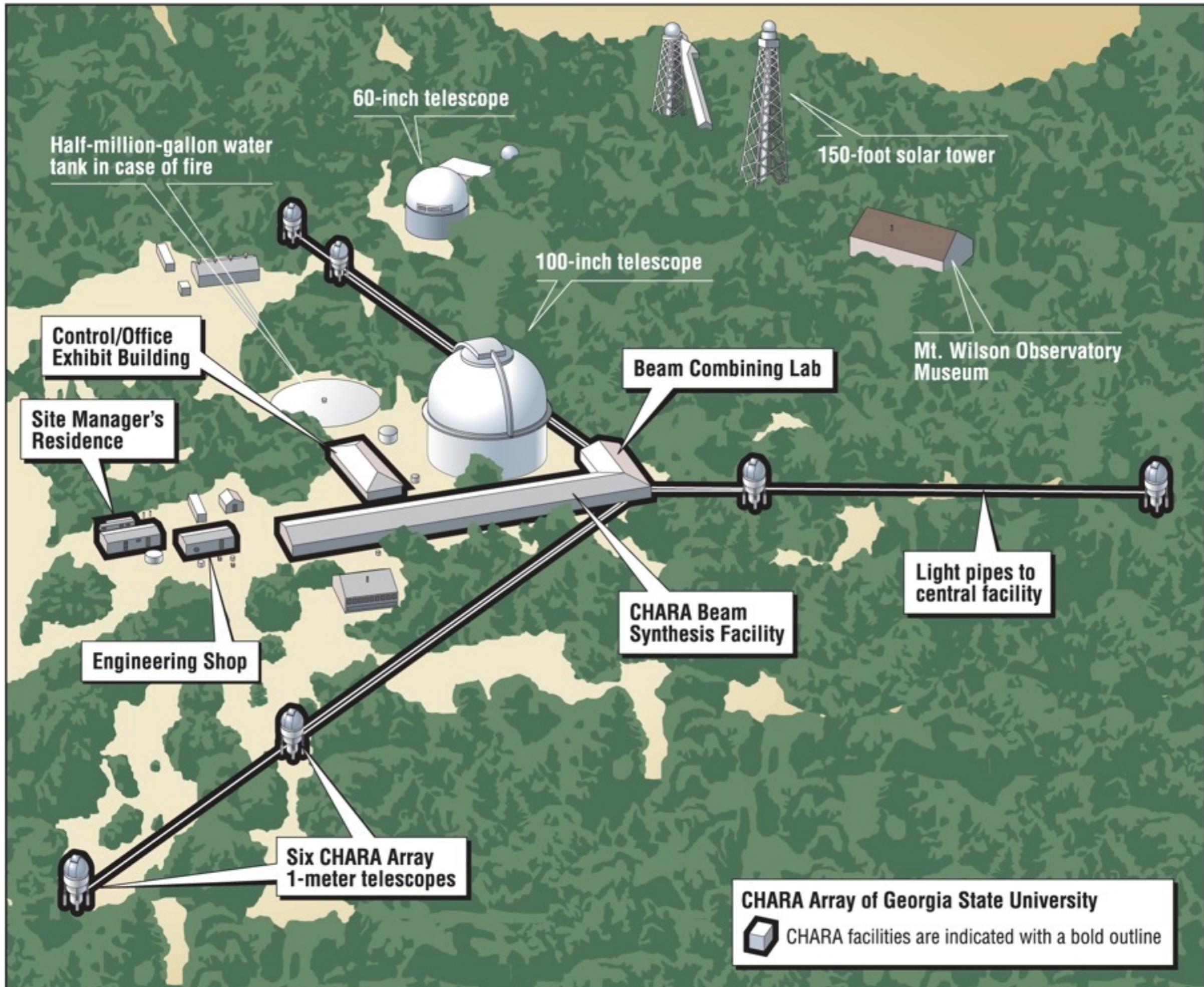
Get precise parameters for
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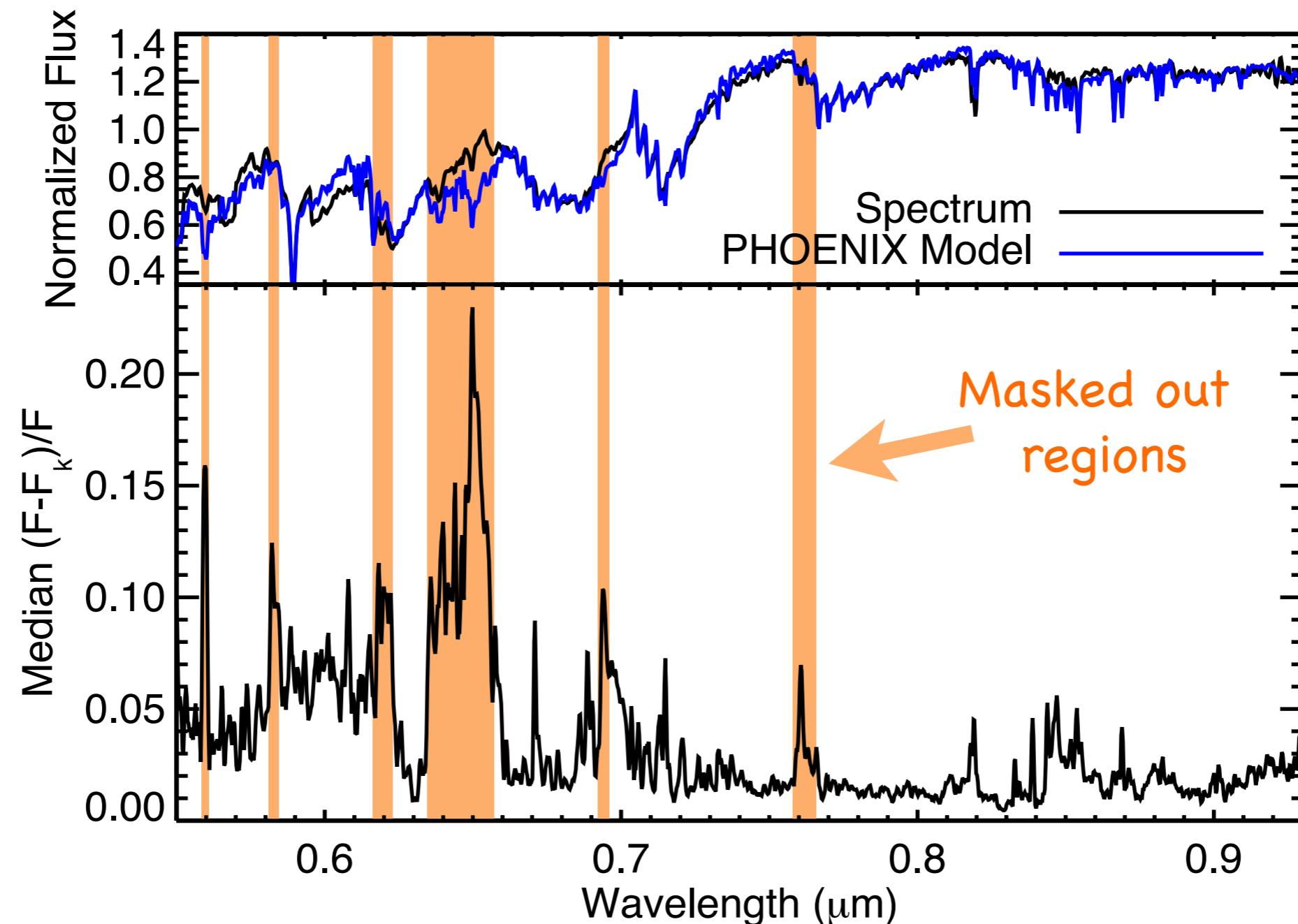
Derive methods that use
less information.



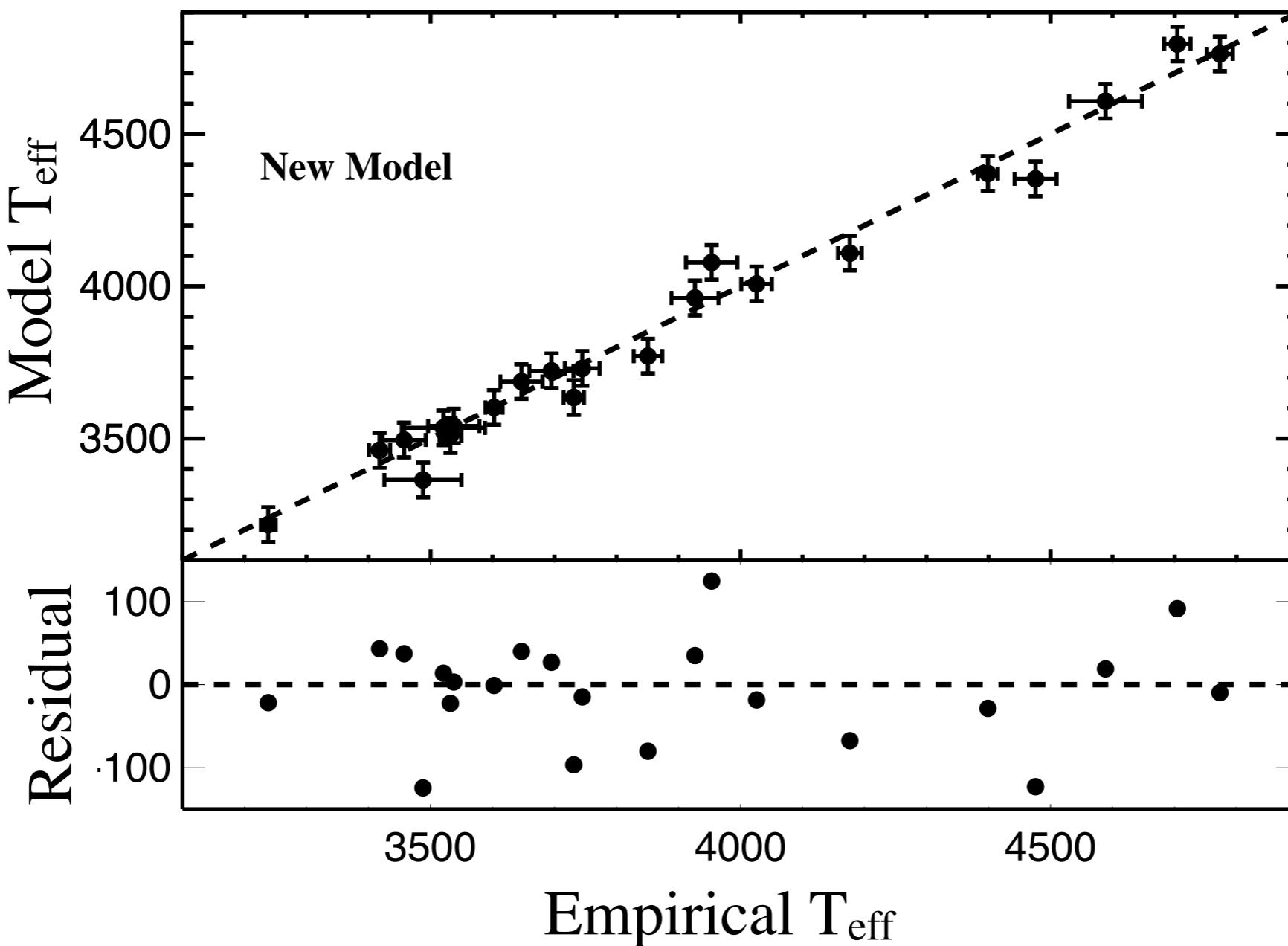
Measuring M dwarf Radii

$$\frac{(\text{Radius})^2}{(\text{Distance})^2} \propto \frac{(\text{Bolometric Flux})}{(T_{\text{eff}})^4}$$

Getting T_{eff}

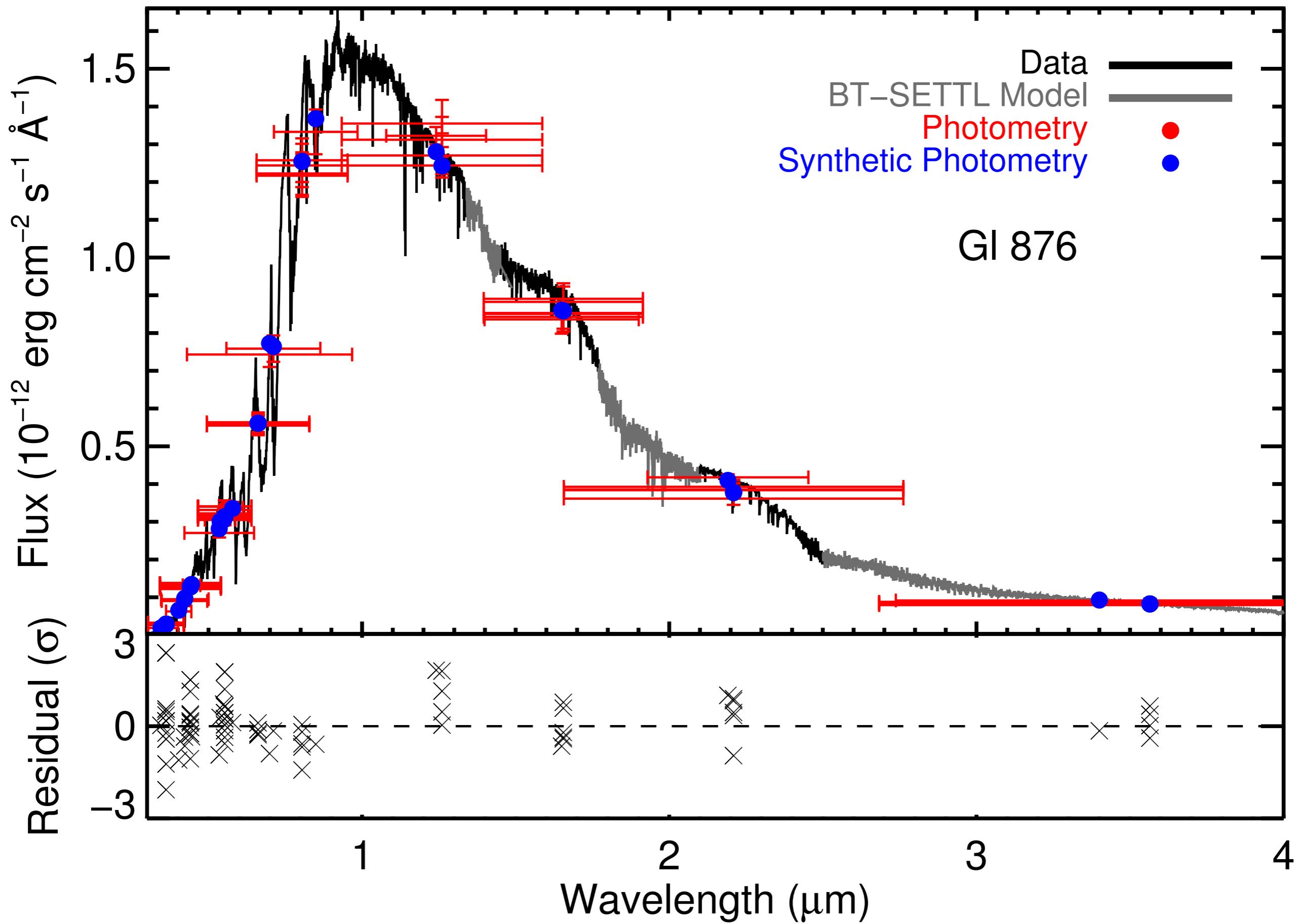


Getting T_{eff}



Measuring M dwarf Radii

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Measuring M dwarf Radii

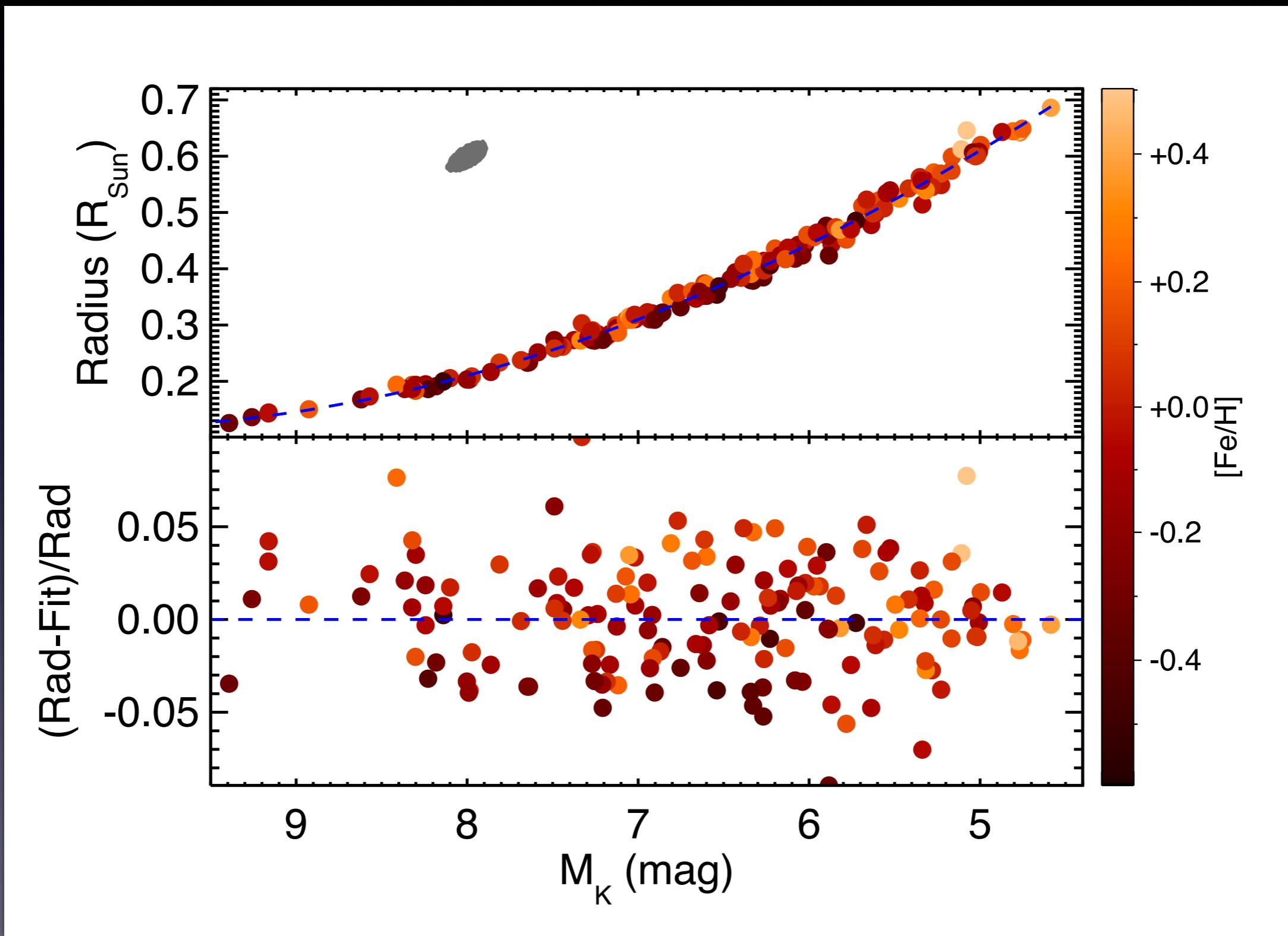
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Measuring M dwarf Radii

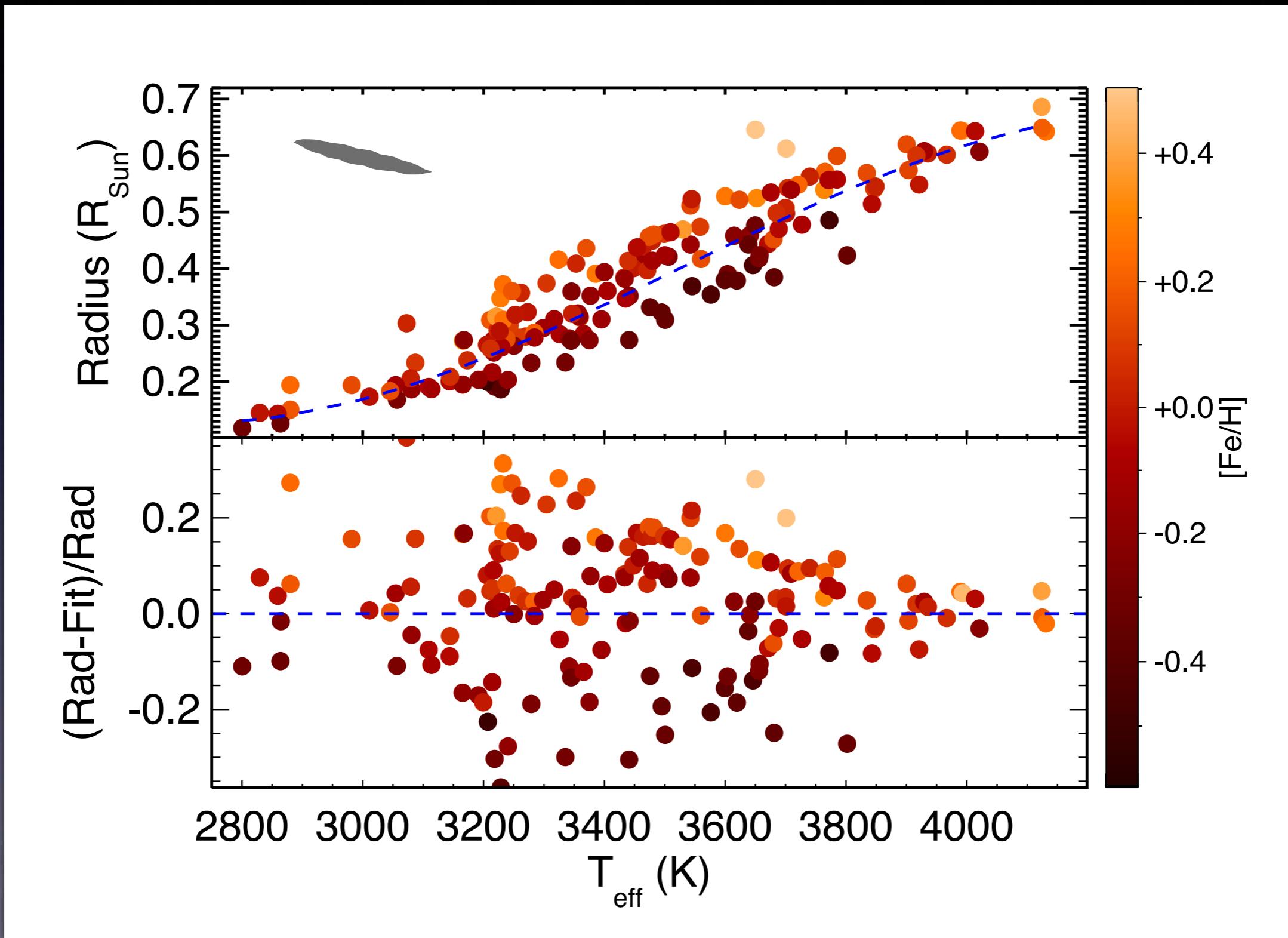
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How to determine an M
dwarf's radius if...

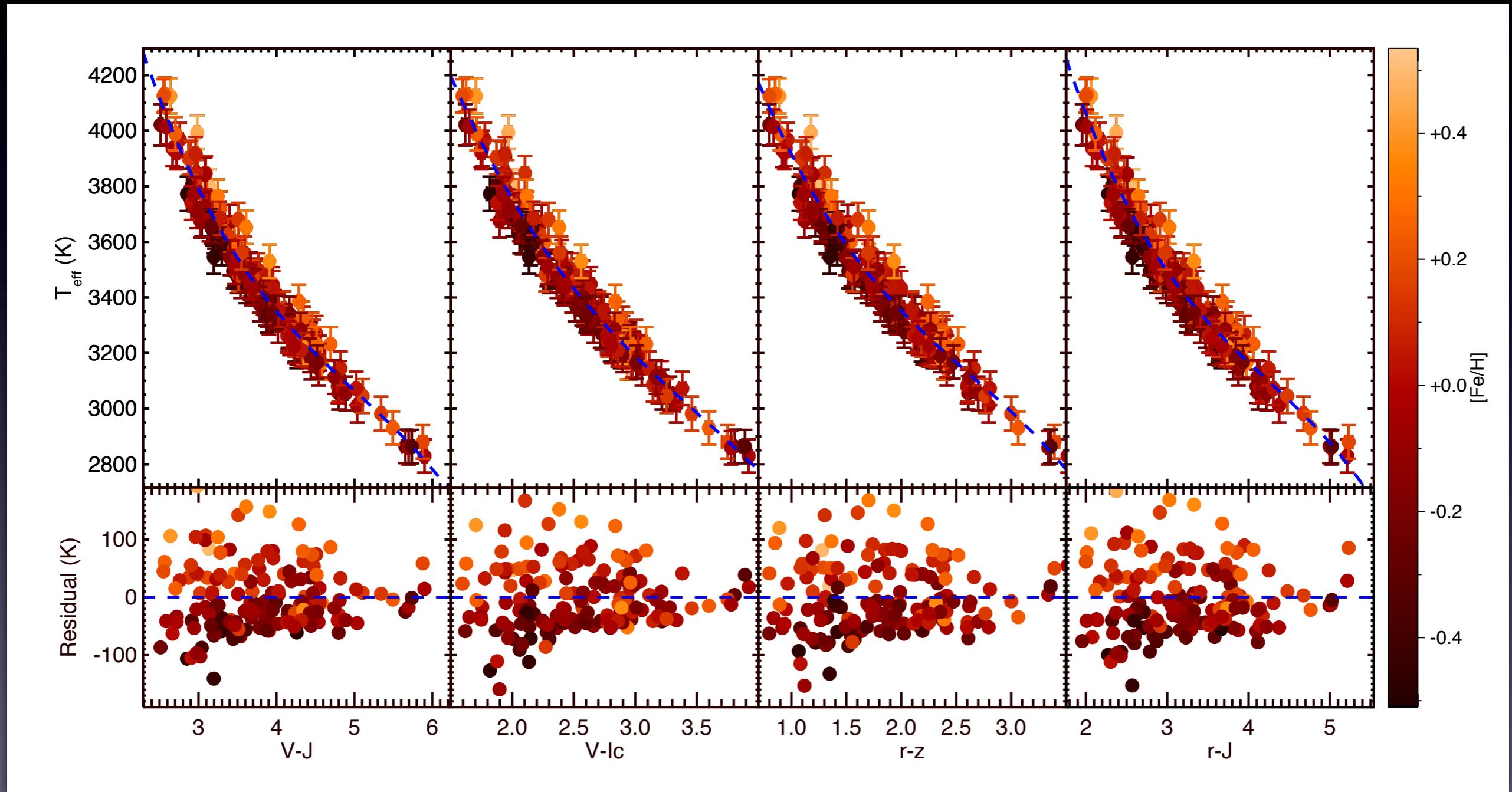
you know the distance...



or just T_{eff}



or even just colors



Paper will be on
arXiv this week

Begin Bonus Slides

Giant table:

Empirical R, T_{eff} , F_{bol} , [Fe/H],
 $VRclcgrizJHK_S$ synthetic photometry,
model estimated mass.

Model Comparison

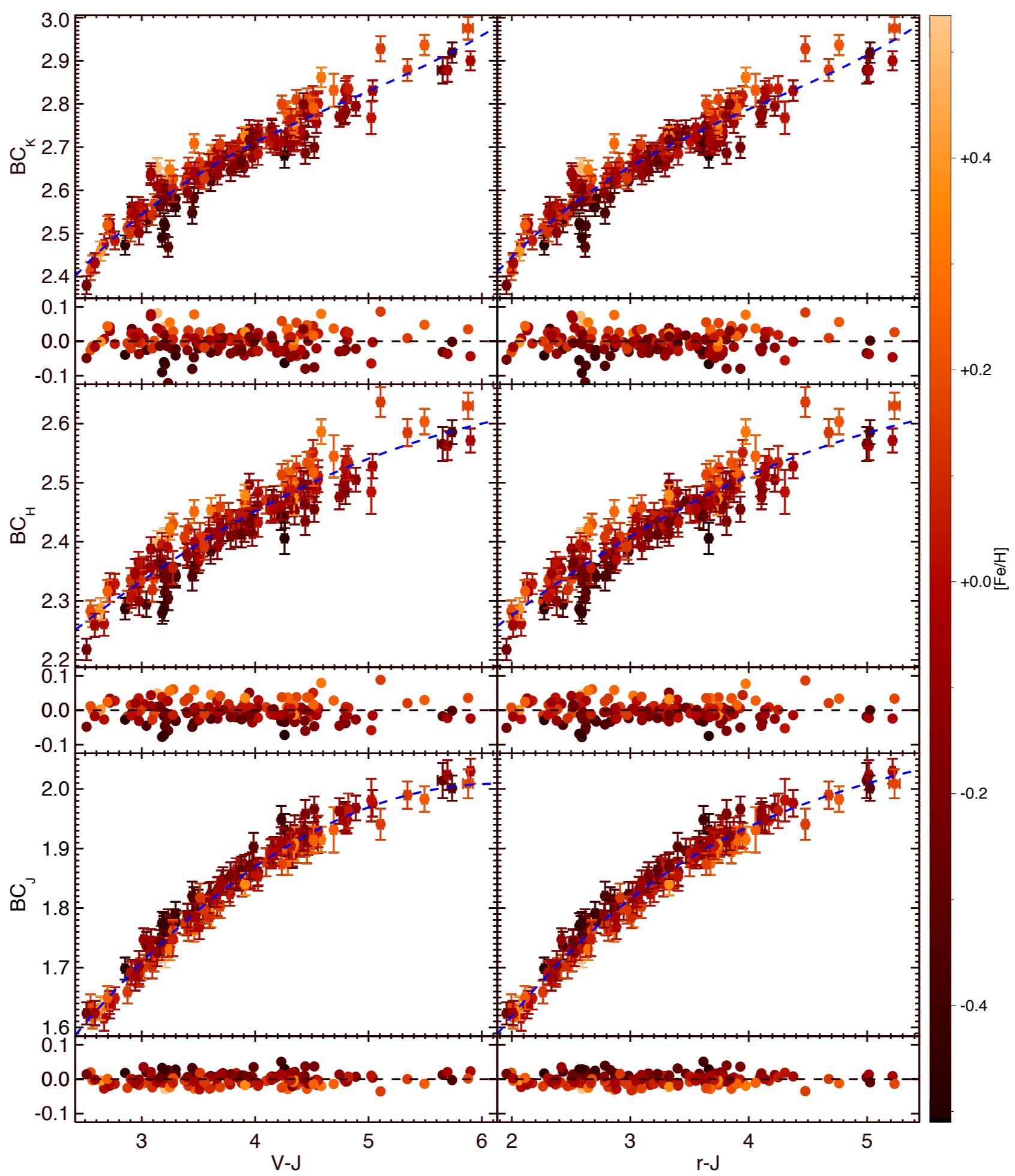
Evidence that inflation in LMEBs
is present in single stars.

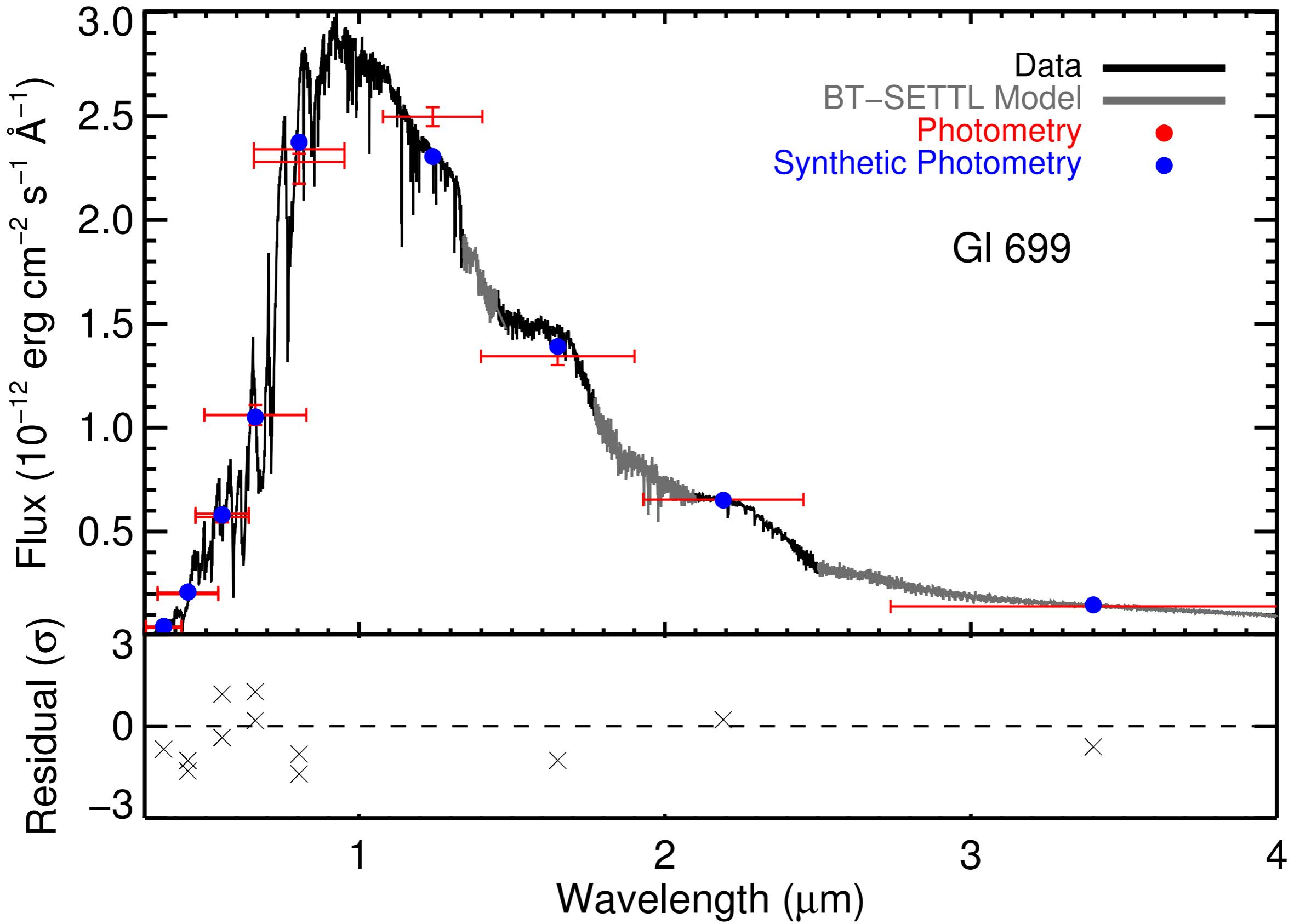
See talk by Greg Feiden

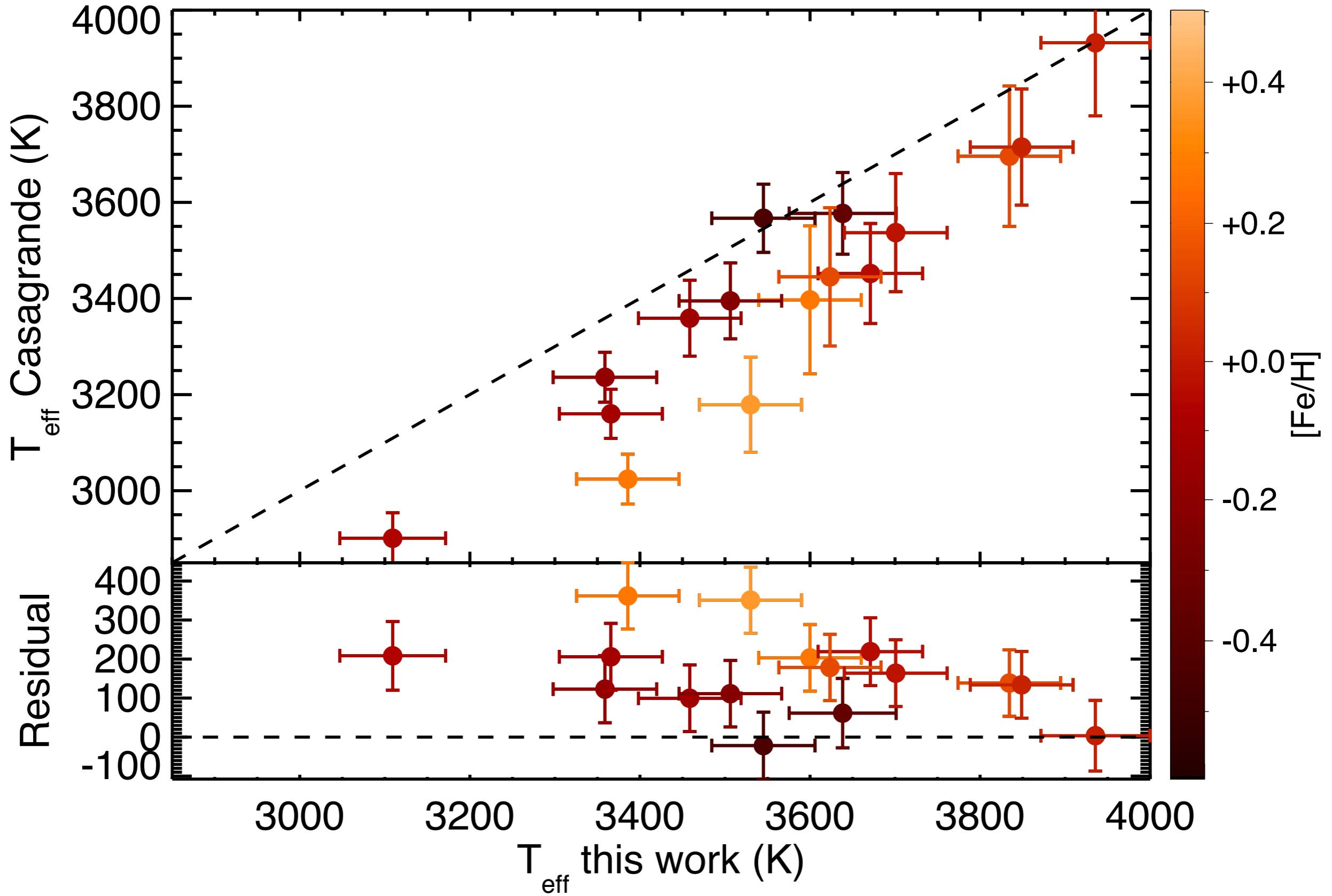
Why we need precise M dwarf radii

Gaia









or even just colors

