

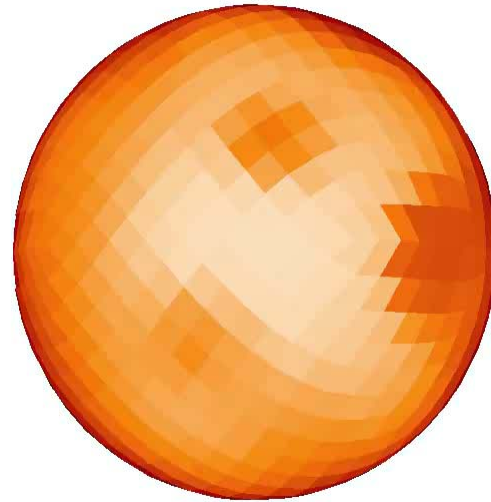
Bright Star Discussion Group: Optical Interferometry

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with Theo ten Brummelaar (CHARA/GSU) and Michelle Creech-Eakman (MROI)

What science can be expected to show unusual growth or expansion during the decade?

- ▶ **Stellar**
 - ▶ Exoplanet hosts
 - ▶ Solar-stellar connection
- ▶ **AGN**

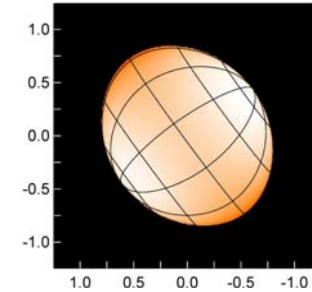
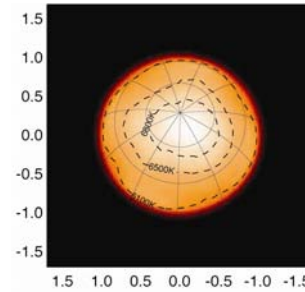
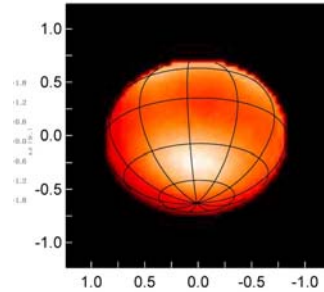
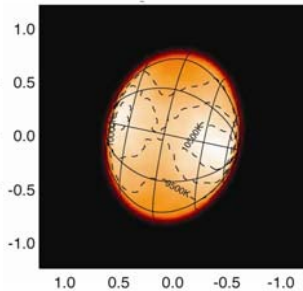
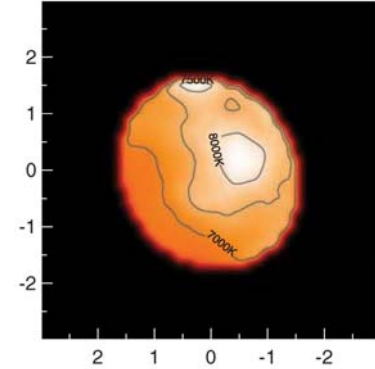
- ▶ **Milli- to micro-arcsecond imaging science**



sig Gem - Rottenbacher et al. 2017

What high priority science will be impossible without new facility developments?

- ▶ Unique discovery space that cannot be accessed by any other means
- ▶ Example: asteroseismology
 - ▶ ‘Gold standard’ -> ‘Platinum standard’



CHARA-MIRC Images of Rapid Rotators

What midscale facility (~\$100M) could provide a breakthrough in this area?

- ▶ Long-baseline optical interferometry is ‘ripe’
 - ▶ CHARA is demonstrating community access, demand for that access
 - ▶ NPOI upgrading to match
 - ▶ MROI can expand on this base further
 - ▶ Technology is now off-the-shelf – ‘no miracles required’
 - ▶ Breakthroughs would be scientific, not technological
- ▶ Community access for US LBOI
 - ▶ Investment at this scale would dramatically expand opportunities, discoveries
 - ▶ 50-100 nights, data support at each facility

Are there decadal initiatives already under discussion that NOAO should consider endorsing or supporting?

- ▶ **Community initiative: PFI**
 - ▶ ‘Optical VLA’ for 2030s
- ▶ **MSIP has been an important mechanism**
 - ▶ Support for, expansion of LBOI could be key to 2020s and beyond

