The high-resolution X-ray spectrum of hot star delta Ori

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• Introduction

• Light curve and LETGS-Spectrum

• SPEX

• Individual line features: He-like ions

• Conclusions

- O-stars radiate X-rays that seem to be formed in clumps. The hotter ions closer to the stellar surface than the cooler ones. All lines have the same shape. Is it then possible that they are formed further away with low absorption? The purpose of the observation is to search for lines from cool plasma at the long wavelength?
- The star delta Ori A is a triple star. Delta Ori Aa1 is O9.5II, delta Ori Aa2 is B0.5III with a period of 5.74 days. Delta Ori Ab is far away
- Do we observe variability? The observation was during primary eclips.













Parameters	CIE	NEI
$\log N_{\rm H} \ [{\rm cm^{-2}}]$	20.17	20.17
$T_1[{ m keV}]$	0.096(.006)	0.094(.003)
$T_2[{ m keV}]$	0.194(.008)	0.189(.004)
$T_3[{ m keV}]$	0.584(.013)	0.574(.010)
$EM_1[10^{54}{ m cm^{-3}}]$	2.00(.19)	1.78(.18)
$EM_2[10^{54}{ m cm^{-3}}]$	3.02(.22)	3.03(.19)
$EM_3[10^{54}{ m cm^{-3}}]$	3.10(.42)	3.48(.25)
$EM_{Tot}[10^{54} {\rm cm}^{-3}]$	8.12(.51)	8.29(.36)
$L_{X1}[10^{31}\mathrm{erg/s}]$	0.88	0.91
$L_{X2}[10^{31}\mathrm{erg/s}]$	3.84	3.70
$L_{X3}[10^{31}\mathrm{erg/s}]$	4.90	5.21
$L_{Tot}[10^{31} \mathrm{erg/s}]$	9.62	9.82



Term scheme of He-like ions. The forbidden line upper level (1s2s) can be depopulated in favour of the 1s2p level by means of collisions (high density) or the UV-radiation field (O-stars). Procyon







## Conclusions

There are no lines of cool ions in the high wavelength range

Lines of He-like ions indicate to have been formed within 10Rstar

The dip in the light curve might be due to eclipsing by the B0.5 III companion. Therefore the distance of the plasma is within the distance of the B0.5 star at 4 stellar radii.