

K2 Proposal on behalf of KASC WG3 (Field 2)

Asteroseismology of Be stars

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The Be stars are normal B stars which show emission, or partial emission, in one or more Balmer lines. The emission is due to circumstellar material ejected by the star. The ejections occur in an episodic events but the mass loss mechanism is yet unknown. We know that many Be stars are periodic and/or multiperiodic light variables caused by either rotational modulation or pulsation or both. Since Be stars are rapid rotators, it seems evident that rotation plays an important role. It is very likely that the interplay of mass loss with pulsations triggers sporadic ejection events, as suggested by the observations obtained with the satellite mission CoRoT for the B0.5IVe star HD49330 during outburst (Huat et al. 2009, A&A 506, 95; Floquet et al., A&A 506, 103).

Monitoring and studying the light variations of Be stars will provide important clues to the unknown mechanism, especially during an outburst. There are few examples of such observations and Be stars are scarce which is why it is so important to obtain K2 data for all the known Be stars. There is only one known Be-stars in Field 2 that is flagged as being on active silicon (χ Oph = EPIC 205283834). Long cadence observations will be entirely suitable for this investigation since the light variations occur on timescales of hours and days.