

recently by Kiang¹⁰ (1962), the non-synchronized ejecta studied by Plavec¹¹ and by Limber⁶ (1963) allowing change between retrograde and forward impact or recoil, as well as the accelerated gas-ejection considered by Reddish, and by Morton¹² when a Roche boundary shrinks faster than its star, can only rarely combine to a risk of terminating binary life in fusion or escape; occasional simultaneity of peaks in the disturbing agencies will demand that re-settlement of stellar surface in a changed orbit could only be achieved through the violent adjustment visible as a nova outbreak.

I am, Gentlemen,

Yours faithfully,

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References

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Possible Variations of the Lithium Line in β Coronae Borealis

GENTLEMEN,—

In two recent communications^{1, 2} the presence of a moderately strong lithium line has been reported in the spectrum of β CrB. In the second reference, Garstang's high dispersion and his measurement of the wavelength leave little doubt as to the identification. On the other hand, the lithium line has been reported³ to be absent from the spectrum of β CrB.

TABLE I

Observations of the Lithium Line in β CrB

Date (U.T.)	Dispersion	Observatory	Observer	Lithium present?
1962 Dec. 19	6 A/mm	Mt. Wilson	Wallerstein	No
1963 June 7	8 "	Lick	Wallerstein	No
1963 June 9	35 "	Merate	Hack	Yes
1963 Oct. 6	8 "	Lick	Wallerstein	No
1964 May 20	35 "	Merate	Hack	Very weak
1964 May 21	8 "	Lick	Wallerstein	No
1964 June 1	8 "	Lick	Preston	No
1964 June 30	35 "	Merate	Faraggiana	Very weak
1964 July 1	35 "	Merate	Faraggiana	Very weak

We wish to report some further observations and to suggest that the strength of the lithium line may be variable. The new observations including the one reported in reference 3 are listed in Table I. It is difficult to avoid the conclusion that the strength of the line is variable although no other spectral variations have been reported⁴ for β CrB.

We would be very grateful if any further observations of the lithium line in β CrB were to be communicated to us.

We remain, Gentlemen,
Yours faithfully,

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References

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On the Spectrum of β Coronae Borealis

GENTLEMEN,—

In a recent note Faraggiana and Hack¹ reported the presence of the *Li* I doublet at λ 6708 in the spectrum of the magnetic star β Coronae Borealis (Fop). Wallerstein, Herbig and Conti² reported the contrary, that the lithium doublet was not present. During a visit to the McDonald Observatory, the present writer obtained a coudé grating spectrogram of β CrB in the red region, on 1952 June 9:30 U.T., exposure $3\frac{1}{2}$ hours on a 103a-F3 plate, dispersion 9.8 Å/mm. This plate has been measured and line identifications carried out³. A feature at λ 6707.90 was recorded. The feature was apparently larger than most granular irregularities, and, if real, had an equivalent width of approximately 50 mÅ. No spectrum variations seem to have been reported⁴, and the proposed lithium identification must remain in doubt. It is clear that caution must be exercised in identifying lithium in any star on the basis of limited observational material.

Neubauer⁵ showed that β CrB is a spectroscopic binary. The radial velocity from our plate is -16.0 km/sec, with an internal standard error of the mean of 0.5 km/sec. Even allowing for possible systematic errors in coudé radial velocities, this value differs by more than might be expected from the value predicted from Neubauer's elements. No redetermination of the elements has been attempted, but an examination of the areas under the velocity curve published by Neubauer and some calculations for a few dates of observation suggest that his published systemic velocity (-18.0 km/sec) is erroneous, and should be -19.8 km/sec, the other elements not being altered. The predicted radial velocity for comparison with our plate becomes -14.9 km/sec, the difference of 1.1 km/sec being quite reasonable.

The red spectral region of β CrB is notable for the strengths of the lines of *Eu* II, λ 6645 being one of the strongest lines in the spectrum. Six *Eu* II lines were observed, at $\lambda\lambda$ 6645, 6437, 6304, 6173, 6049 and 5966, with