to have a maximum perihelion temperature of 685° K. A long-focus telescope would be required, preferably a reflector. Reflected sunlight may be eliminated by a solution of neocyanine in chloroform, a combination which may be adjusted for high efficiency.

Most favorable conditions for observing would probably be found near the planet's greatest elongation, when the test would hinge upon an observable difference between the quarter-phase appearance given by reflection and that of a much smaller zone, centered on the subsolar point, as presented by the planet's own radiation.

Low-temperature companions of 61 Cygni and 70 Ophiuchi have been discussed by Russell.[1] Taking 700° K. as the limiting temperature for visibility, making certain assumptions as to composition, and supposing that the light of the primary were obscured, he concluded that such a companion might be just visible.

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THE SPECTRUM OF COMET WHIPPLE 2 (1942*f*)

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Comet 1942*f* was located very advantageously during January 1943 for a study of possible bands due to polyatomic molecules: it was quite distant from the sun ($r = 1.4$ astronomical units), yet very close to the earth ($r = 0.45$ astronomical units), and it was bright enough to be investigated with fairly high dispersion. An increase in heliocentric distance should enhance the bands of polyatomic molecules relative to the bands of diatomic molecules resulting from the photodissociation of the polyatomic compounds considered. It has been proved[2] conclusively that this is actually true for the relative intensities of CH_2 and CH bands.

[1] *Pub. A.S.P.*, **55**, 79, 1943.

[2] P. Swings, *Rev. Mod. Phys.*, **14**, 190, 1942.

During January 1943, we obtained several spectrograms of Comet 1942*f* with the glass and the quartz spectrographs at McDonald, using the f/2 camera (dispersions 50 and 100 A/mm, respectively, at λ 3930). The CH_2 lines around λ 4050 are quite strong, in contrast with the λ 4315 *CH* band, which is hardly visible: actually λ 4051 CH_2 is comparable in intensity to the (0, 0) band of *CN*. The λ 3883 *CN* band has the usual complex structure[1]; the "near origin maxima" in the P and R branches indicate some structure which would correspond to $K' = 2$ and 3, but this is at the limit of the resolving power. The *NH* lines near λ 3360 are very weak. The Swan bands of C_2 are also rather weak, the only transitions definitely observed being (0, 0), intensity 2; (1, 0), int. 1; (2, 1), int. 1–0; and (0, 1), int. 1–0.

The most interesting observation is that of the fairly high intensity of the "λ 6300 group," its leading line λ 6299 being of an intensity comparable to the strongest CH_2 line λ 4051. This high intensity of λ 6299 and of its associated lines is in accordance with the suggestion[2] that the "λ 6300 group" is due to the polyatomic molecule NH_2.

The wave lengths of some of the members of the "λ 6300 group," as obtained in Comet 1942*f*, are listed in Table I.

TABLE I

RED LINES OF THE "λ 6300 GROUP" IN COMET 1942*f*

Wave Length	Intensity
6299.0	5
6330.5	1
6345.6	1–0
6366.3	1
?6380.4	?1

McDONALD OBSERVATORY
March 8, 1943

[1] P. Swings, *Lick Obs. Bull.,* **19**, 131, 1941; A. McKellar, *Rev. Mod. Phys.,* **14**, 179, 1942.

[2] P. Swings, A. McKellar, and R. Minkowski, *Ap. J.,* in press.