

the time when the stars are 0.1 astronomical units apart is adopted, though there can be no reason for this instant having any particular significance any more than any subsequent instant. Actually, β is variable and tends to infinity as the stars separate. Luyten uses the value 0.092 throughout the motion and describes this as leading to a "generous upper limit" for a quantity that is found to be proportional to β .

These comments show that the criticisms of the theory of the origin of the solar system by collision contained in Luyten's paper are not based on valid arguments.

R. A. LYTTLETON

PARKSTONE
DORSET, ENGLAND
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THE SPECTRUM OF COMET 1942*a* (WHIPPLE)*

Several spectrograms of Comet 1942*a* have been obtained with the quartz and glass cassegrain spectrographs of the McDonald Observatory, equipped with the f/2 Schmidt camera. At heliocentric distances from 1.8 to 1.5 A.U., the comet was characterized

TABLE 1
 λ 4050 GROUP IN COMET 1942*a*

Int.	λ	Int.	λ
2.....	4019.2	6.....	4051.4
3.....	4039.1	2.....	4069.3
3.....	4042.1*	2n.....	4073.5
2-3.....	4043.5*	1n?.....	4075.0

* The resolution of these two lines is difficult.

TABLE 2
OH LINES IN COMETS 1942*a*, 1941*d*, AND 1940*c*

λ IN 1942 <i>a</i>	INTENSITIES			IDENTIFICATION	
	1942 <i>a</i>	1941 <i>d</i>	1940 <i>c</i>	λ Lab.	Notation
3078.7.....	1-0	1-0	2	3078.43	$Q_1(1\frac{1}{2})$
3081.9.....	4	3	1	3081.64	$P_1(1\frac{1}{2})$
3086.3.....	1-2	2	3086.38	$P_1(2\frac{1}{2})$
3089.7.....	0	1	4	3090.46	$Q_2(\frac{1}{2})$
				3089.84	$Q_2(1\frac{1}{2})$
				3089.84	$Q_2(2\frac{1}{2})$
3093.9.....	2	2	1	3093.72	$P_2(1\frac{1}{2})$
3099.4.....	0	2	3099.57	$P_2(3\frac{1}{2})$

by a very strong reflected solar spectrum and fairly weak molecular emission. Only the bands of *CN*, *NH*, *OH*, and λ 4050 were conspicuous. Among the Swan bands, only the (0, 0) transition was well apparent, whereas traces of the (1, 1) and (1, 0) transitions were hardly visible. There was no trace of *CH*.

The λ 4050 group was comparable in intensity to *CN*. Our measured wave lengths are given in Table 1; the dispersion at λ 4050 was 55 A/mm, and the effective slit width was 0.8 A.

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