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PHOTOGRAPHIC OBSERVATIONS OF NGC 2346 DURING 1984 - 1985

We report further photographic observations of the central star of NGC 2346 obtained during the 1984 - 85 observing season. These continue from the observations reported for the three previous seasons, (see Marino and Williams, 1984, and the references therein).

The methods of observation and reduction are the same as in previous years. 66 photographs were taken by Williams using the equipment described previously. A further 4 photographs were taken by M. Bos of Auckland. All magnitudes were determined from the photographs by Marino.

The new photographic estimates are presented in Table I. The approximate times of observed maxima with cycle phase positions are given in Table II.

The sixteen day periodicity of the light curve continues in the current data. Maxima are maintaining the 0.8 phase position, half a cycle displaced from the maxima observed prior to cycle 167.0.

From early in the season maxima were as bright as m_v = 11 (c.f. m_v = ~13 at the end of the 1983 - 84 season). This was the steady magnitude of the central star prior to onset of the first occulting events in 1981 - 82.

The maxima appear to be becoming wider with time and the minima narrower indicating a continuing clearing of the obscuring cloud from our line of sight to the system. The magnitude at minima continued to be fainter than m_v = 14 for the full observing season.

Observations are to be continued during the next season.

Table I

Photographic observations of the central star of NGC 2346 between 1984 November and 1985 May

J.D. 2446000+		m_v	phase
025.1	fainter than	14.4	181.30
026.0	fainter than	14.4	181.35
034.1		11.6	181.86
051.9		12.3	182.97
052.9		13.2	183.03*
054.9	fainter than	14.4	183.16*
057.9	fainter than	14.4	183.35
061.9		12.9	183.60
062.0		12.9	183.60*
065.0		11.0	183.79*
074.9	fainter than	14.0	184.41
075.9	fainter than	14.0	184.47
077.9		13.3	184.60
078.9		12.6	184.66
079.9		11.9	184.72
080.9		11.2	184.73
082.9		12.0	184.85
084.9		13.1	185.04
086.9		14.2	185.16
087.9		14.6	185.22
088.9		14.6	185.29
092.9		12.9	185.54
095.9		11.5	185.72
096.9		11.7	185.79
097.9		11.5	185.85
098.9		11.7	185.91
099.9		11.9	185.97
102.9	fainter than	14.0	186.16
105.9	fainter than	14.0	186.35
108.9		13.3	186.54
110.9		11.7	186.66
113.9		11.0	186.85
116.9		11.4	187.04
119.9		14.0	187.22
120.8	fainter than	14.4	187.28
133.8		11.9	188.09
134.9		13.4	188.16
135.8		13.5	188.22
139.9		13.4	188.47
140.9		11.9	188.54
141.8		11.4	188.59
143.9		11.4	188.72
145.9		10.8	188.85
155.8		13.5	189.47
162.9		11.2	189.91
164.8		11.4	190.03
165.9		11.4	190.10
166.8		11.8	190.16
167.9		13.6	190.23
168.8	fainter than	14.4	190.28
169.9		14.2	190.35
170.8		13.8	190.41
171.8		13.1	190.47
176.8		10.8	190.78
177.8		11.1	190.84
178.9		11.0	190.91
184.8		14.2	191.28
185.8		14.5	191.35
191.8		10.8	191.72
192.8		10.8	191.78
193.8		11.0	191.85
194.8		11.5	191.91
197.8		11.8	192.10
201.8		14.0	192.35
202.8		13.0	192.41
204.8		11.3	192.53
212.8		11.2	193.03
213.8		11.3	193.10
215.8		12.6	193.22

* photographs by M. Bos, all others by H. Williams

Table II

Approximate times and phases of maxima for the central star of NGC 2346

J.D. 2446000+	m_v	phase	comments
034.1	11.6	181.86	
051.9	12.3	182.97	probably earlier
065.0	11.0	183.79	
080.9	11.2	184.73	
095.9	11.5	185.72	possibly later
113.9	11.0	186.85	
133.8	11.9	188.09	probably earlier
145.9	10.8	188.85	
162.9	12.2	189.91	probably earlier
176.8	10.8	190.78	
192.3	10.8	191.75	
212.8	11.2	193.03	earlier.

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Reference:

Marino, B.F. and Williams, H.O., 1984, I.B.V.S No. 2583.