Repeating Novae and SN Ia

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REPEATING NOVAE

BY

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as read by

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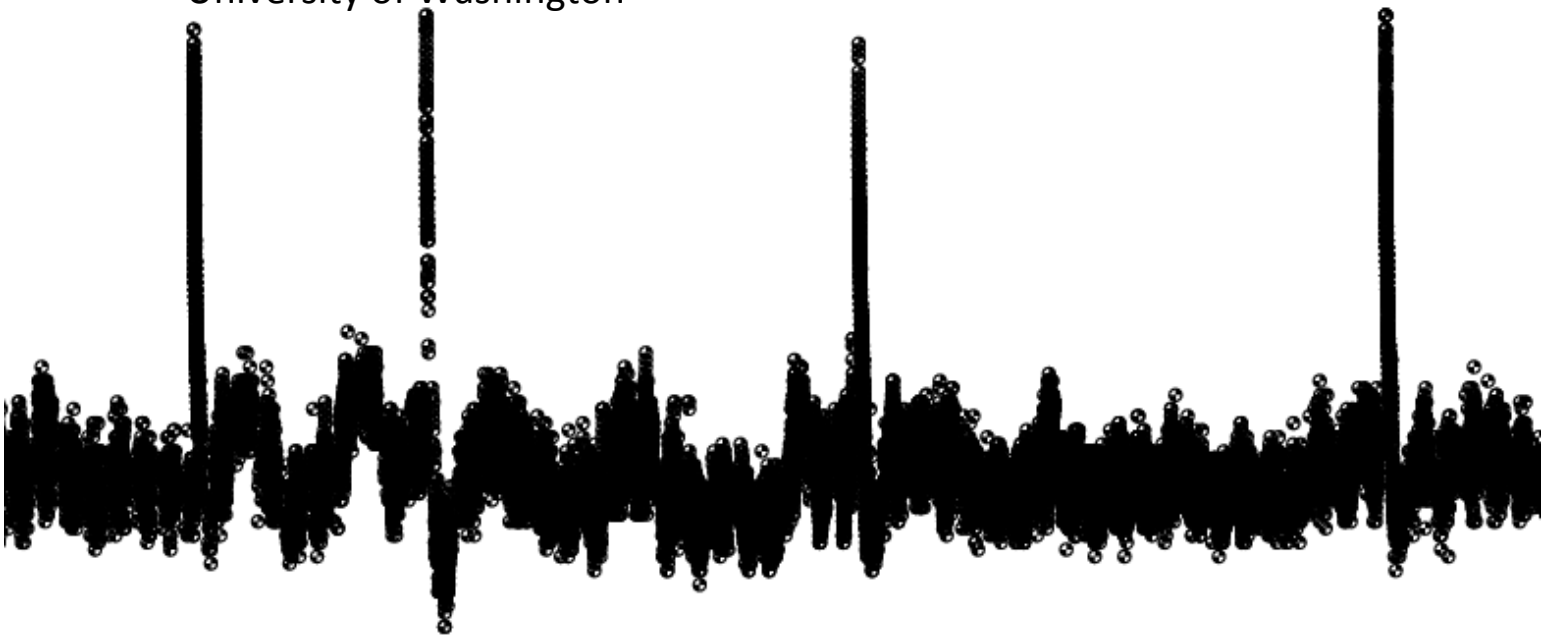


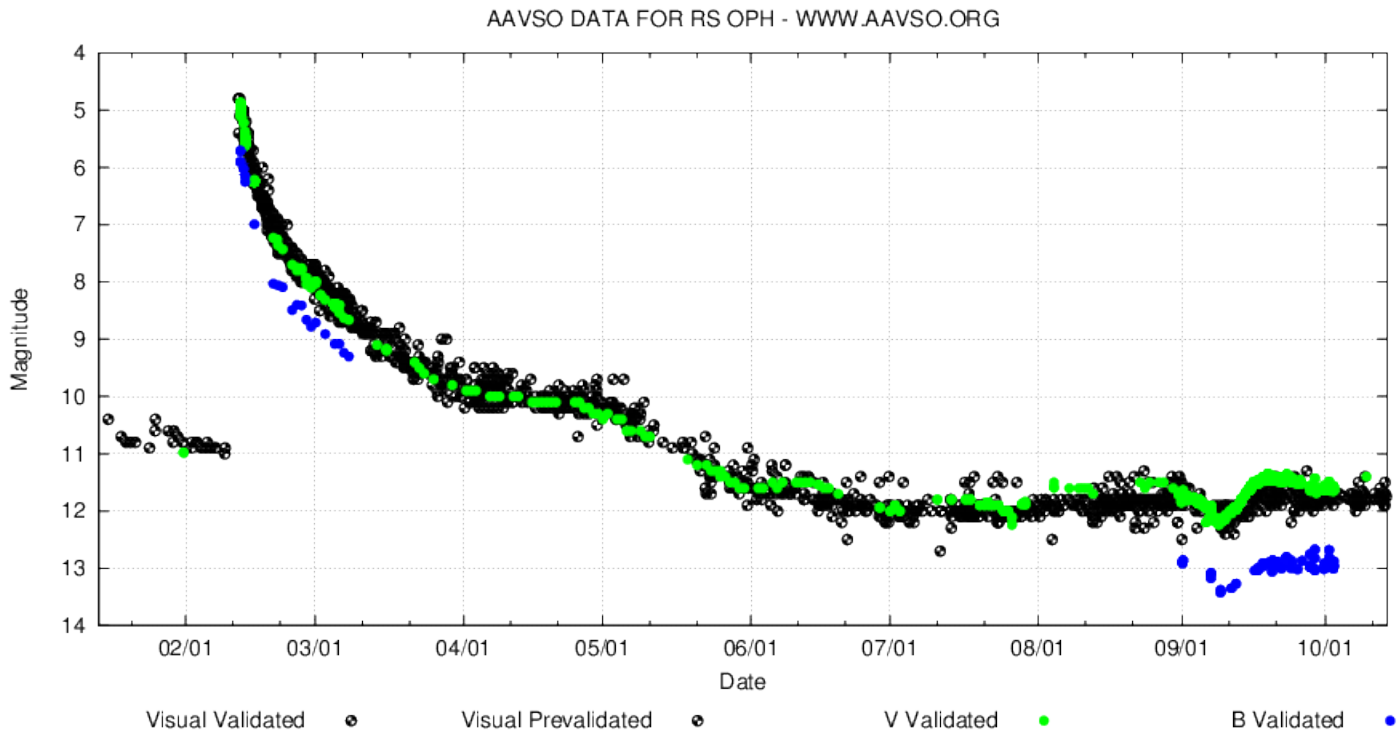
Repeating Novae

Table 1
RN Summary

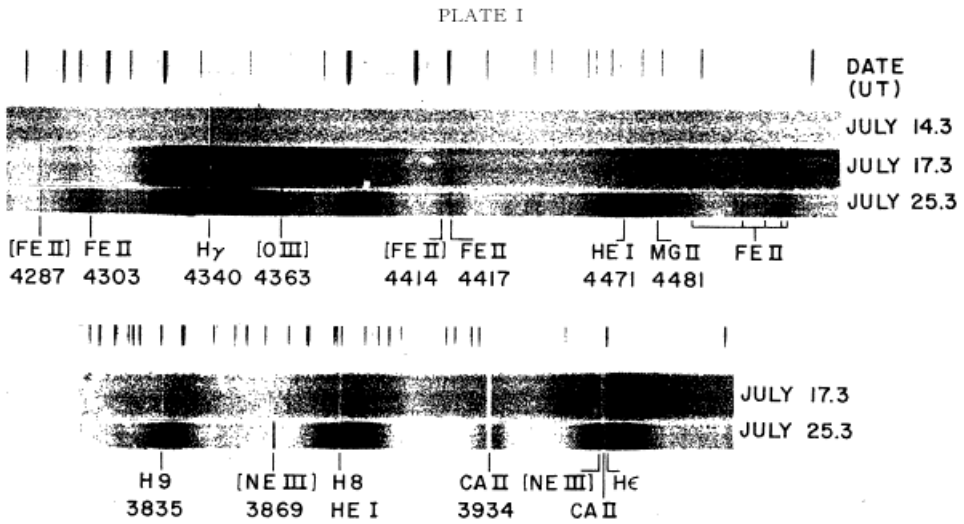
RN	V_{peak} (mag)	V_{min} (mag)	t_3 (days)	P_{orb} (days)	Eruption Years
T Pyx	6.4	15.5	62	0.076	1890, 1902, 1920, 1944, 1967
IM Nor	8.5	18.3	80	0.102	1920, 2002
CI Aql	9.0	16.7	32	0.62	1917, 1941, 2000
V2487 Oph	9.5	17.3	8	~ 1	1900, 1998
U Sco	7.5	17.6	2.6	1.23	1863, 1906, 1917, 1936, 1945, 1969, 1979, 1987, 1999
V394 CrA	7.2	18.4	5.2	1.52	1949, 1987
T CrB	2.5	9.8	6	228	1866, 1946
RS Oph	4.8	11	14	457	1898, 1907, 1933, 1945, 1958, 1967, 1985, 2006
V745 Sco	9.4	18.6	9	510	1937, 1989
V3890 Sgr	8.1	15.5	14	519.7	1962, 1990

Schaefer (2010)

Light Curve of RS Oph (2006)



Spectra of RS Oph (1958 July 14-25)



PORTIONS OF THE SPECTRUM OF NOVA RS OPHIUCHI

Wallerstein (1958)

Light Curve of T CrB (1946)

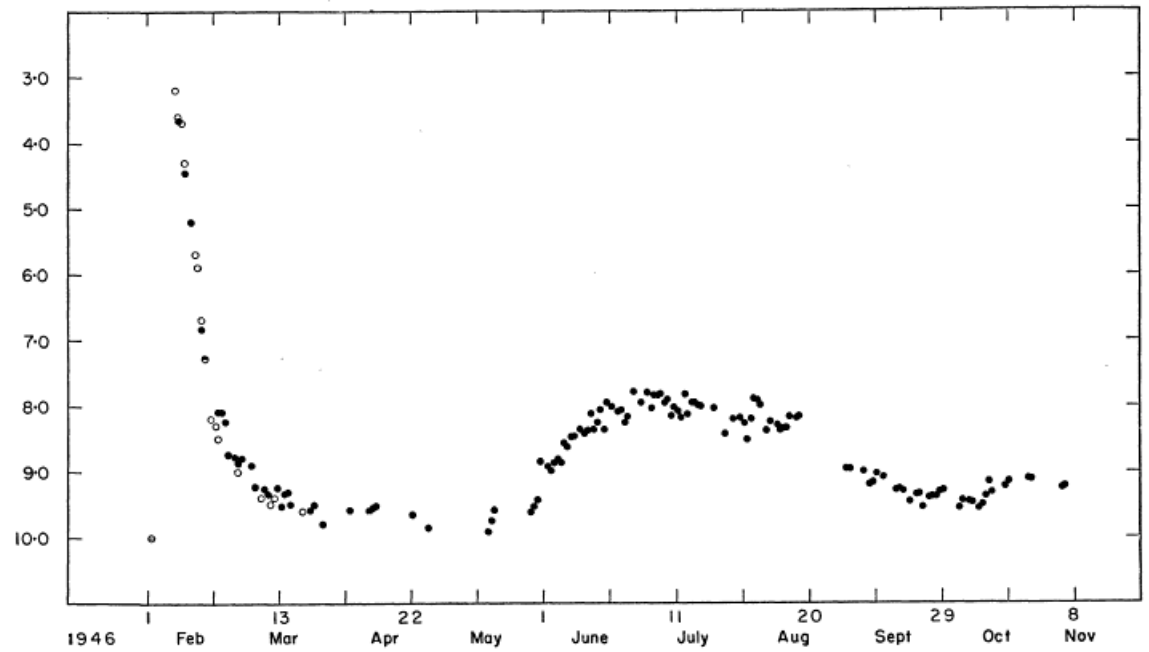
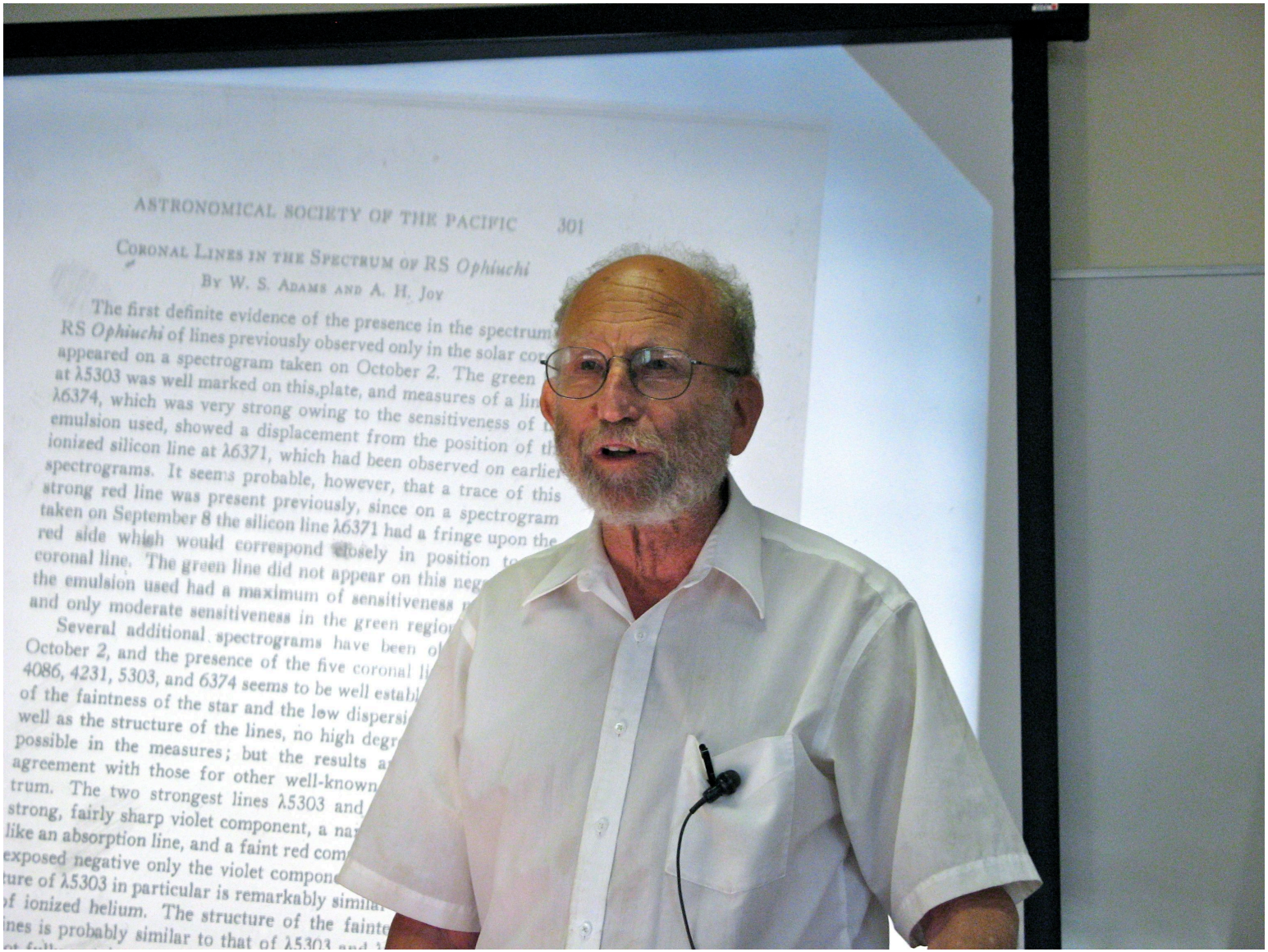


FIG. 1.—Light-curve of T CrB from February to November, 1946. The circle with the line is the observation before outburst, by Peltier. The open circles represent Morgan's visual observations, and the filled circles are from Pettit's published lists.

Morgan & Deutsch (1947)



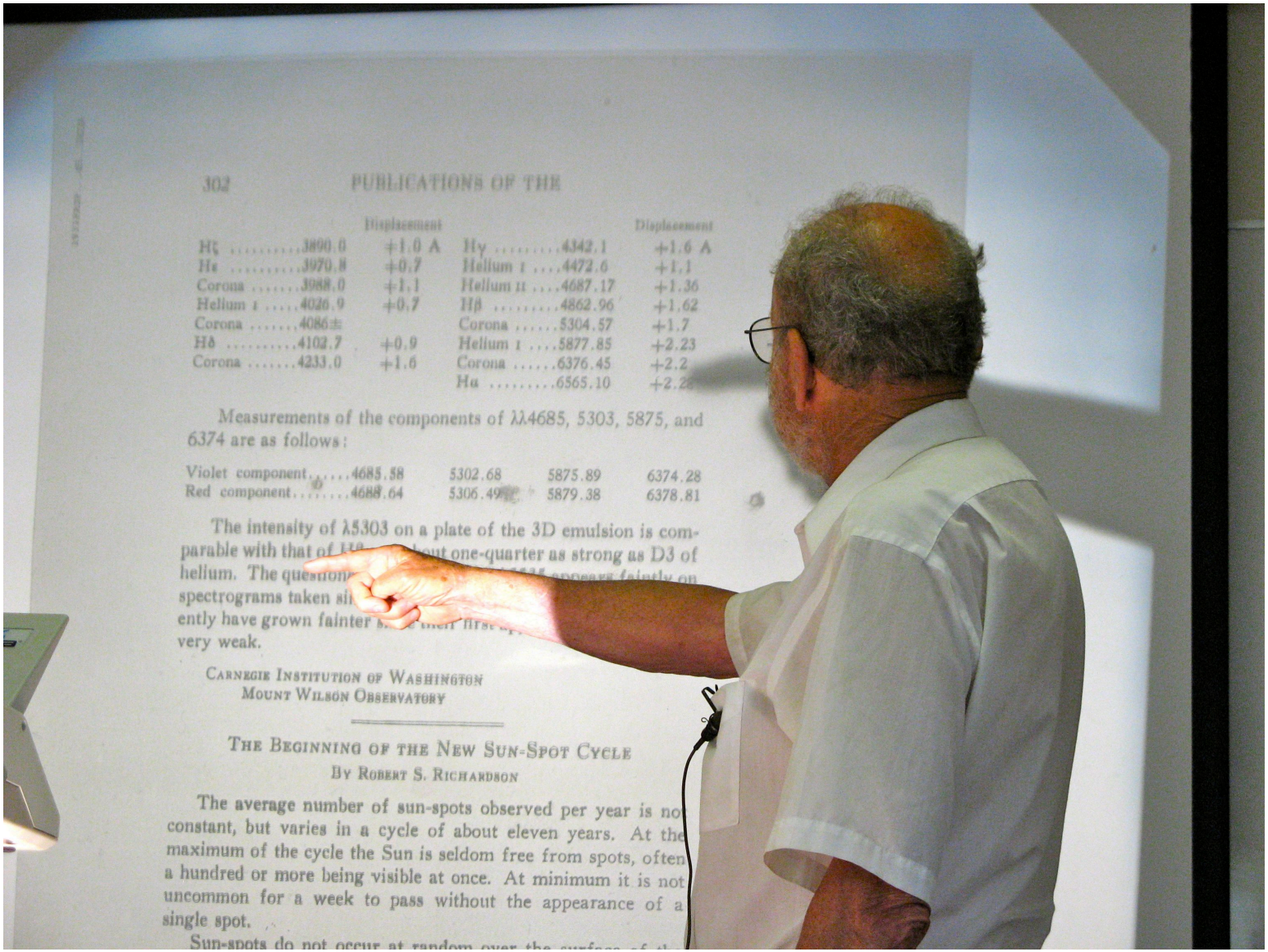
ASTRONOMICAL SOCIETY OF THE PACIFIC 301

CORONAL LINES IN THE SPECTRUM OF RS *Ophiuchi*

BY W. S. ADAMS AND A. H. JOY

The first definite evidence of the presence in the spectrum
RS *Ophiuchi* of lines previously observed only in the solar cor
appeared on a spectrogram taken on October 2. The green
at λ5303 was well marked on this plate, and measures of a lin
λ6374, which was very strong owing to the sensitiveness of t
emulsion used, showed a displacement from the position of th
ionized silicon line at λ6371, which had been observed on earlie
spectrograms. It seems probable, however, that a trace of this
strong red line was present previously, since on a spectrogram
taken on September 8 the silicon line λ6371 had a fringe upon the
red side which would correspond closely in position to
coronal line. The green line did not appear on this neg
the emulsion used had a maximum of sensitiveness
and only moderate sensitiveness in the green regio

Several additional spectrograms have been ob
October 2, and the presence of the five coronal li
4086, 4231, 5303, and 6374 seems to be well establ
of the faintness of the star and the low dispersi
well as the structure of the lines, no high degr
possible in the measures; but the results a
agreement with those for other well-known
trum. The two strongest lines λ5303 and
strong, fairly sharp violet component, a na
like an absorption line, and a faint red com
exposed negative only the violet compon
ture of λ5303 in particular is remarkably simila
of ionized helium. The structure of the fainte
lines is probably similar to that of λ5303 and



302 PUBLICATIONS OF THE

		Displacement			Displacement
Hζ	3890.0	+1.0 A	Hγ	4342.1	+1.6 A
Hε	3970.8	+0.7	Helium I	4472.6	+1.1
Corona	3988.0	+1.1	Helium II	4687.17	+1.36
Helium I	4026.9	+0.7	Hβ	4862.96	+1.62
Corona	4086±		Corona	5304.57	+1.7
Hδ	4102.7	+0.9	Helium I	5877.85	+2.23
Corona	4233.0	+1.6	Corona	6376.45	+2.2
			Hα	6565.10	+2.2

Measurements of the components of λλ4685, 5303, 5875, and 6374 are as follows:

Violet component	4685.58	5302.68	5875.89	6374.28
Red component	4688.64	5306.49	5879.38	6378.81

The intensity of λ5303 on a plate of the 3D emulsion is comparable with that of H[illegible] about one-quarter as strong as D3 of helium. The question[illegible] appears faintly on spectrograms taken si[illegible] ently have grown fainter s[illegible] very weak.

CARNEGIE INSTITUTION OF WASHINGTON
MOUNT WILSON OBSERVATORY

THE BEGINNING OF THE NEW SUN-SPOT CYCLE

BY ROBERT S. RICHARDSON

The average number of sun-spots observed per year is no constant, but varies in a cycle of about eleven years. At the maximum of the cycle the Sun is seldom free from spots, often a hundred or more being visible at once. At minimum it is not uncommon for a week to pass without the appearance of a single spot.

Sun-spots do not occur at random over the surface of th

Spectra of T CrB (1946 Feb 9-14)

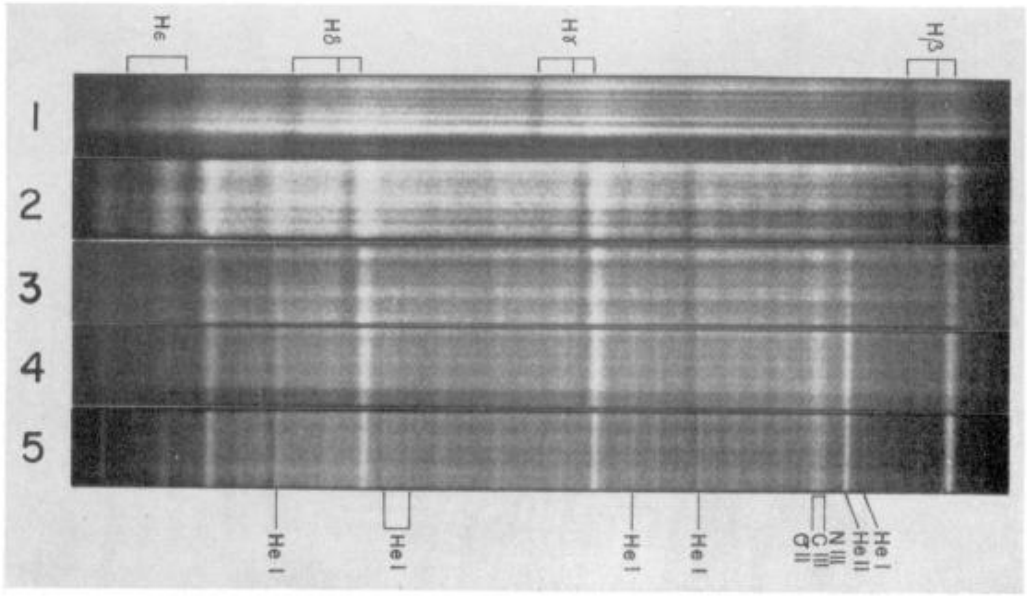


FIG. 3.—Positive prints of spectrograms of T CrB. The dates and visual magnitudes are: *1*, 1946, Feb. 9.34, 3.2; *2*, Feb. 10.42, 3.6; *3*, Feb. 11.41, 3.7; *4*, Feb. 12.36, 4.3; *5*, Feb. 14.49, 5.2.

Morgan & Deutsch (1947)

Spectra of T CrB (1946 Feb 15-20)

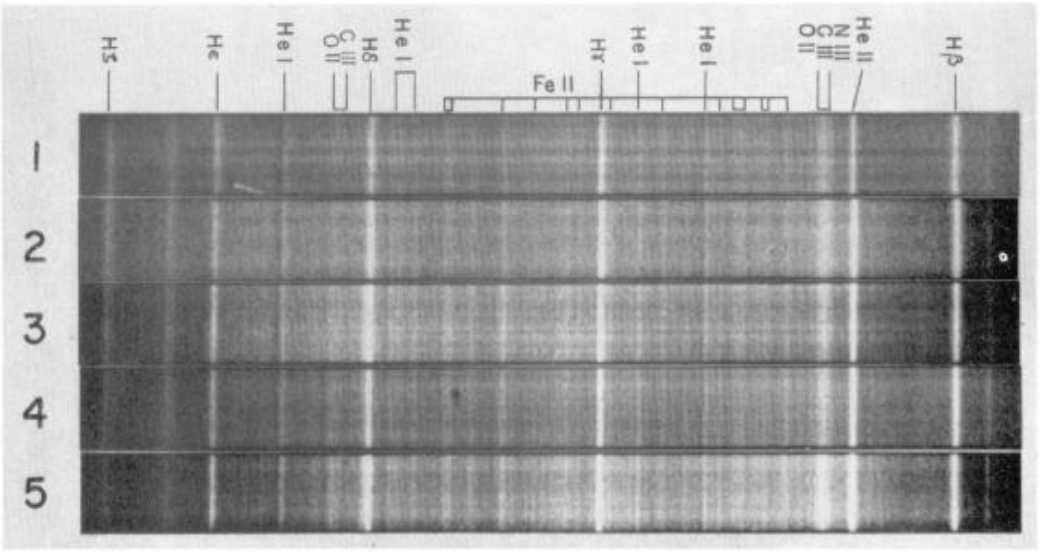


FIG. 4.—Positive prints of spectrograms of T CrB. The dates and visual magnitudes are: *1*, 1946, Feb. 15.31, 5.7; *2*, Feb. 16.29, 5.9; *3*, Feb. 17.32, 6.7; *4*, Feb. 18.30, 7.3; *5*, Feb. 20.47, 8.2.

Morgan & Deutsch (1947)

Spectra of T CrB (1946 Feb 22-Apr 28)

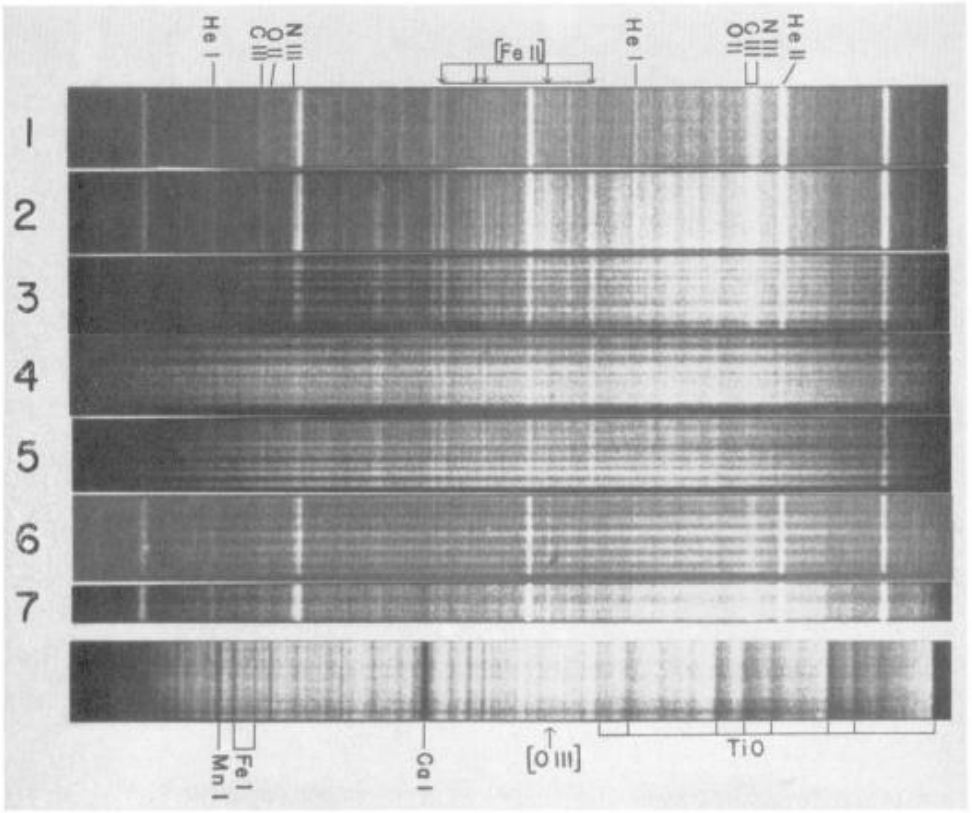
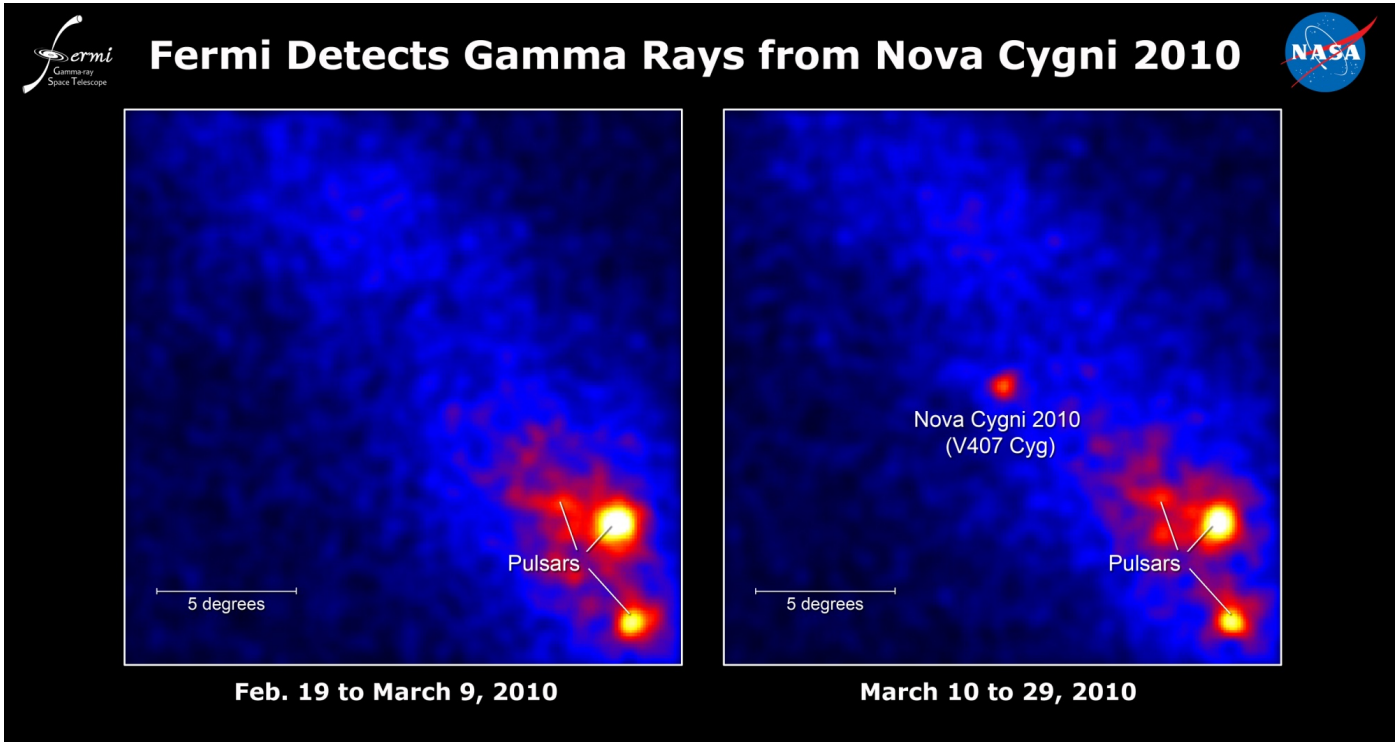


FIG. 5.—Positive prints of spectrograms of T CrB. The dates and visual magnitudes are: *1*, 1946, Feb. 22.35, 8.5; *2*, Mar. 11.36, 9.4; *3*, May 29.15, 9.5; *4*, June 8.17, 8.6; *5*, June 11.13, 9.4; *6*, 1947, Mar. 17.39, 9.8; *7*, 1947, April 28.24, 9.6. The last spectrogram is of g Herculis, an M star, for comparison.

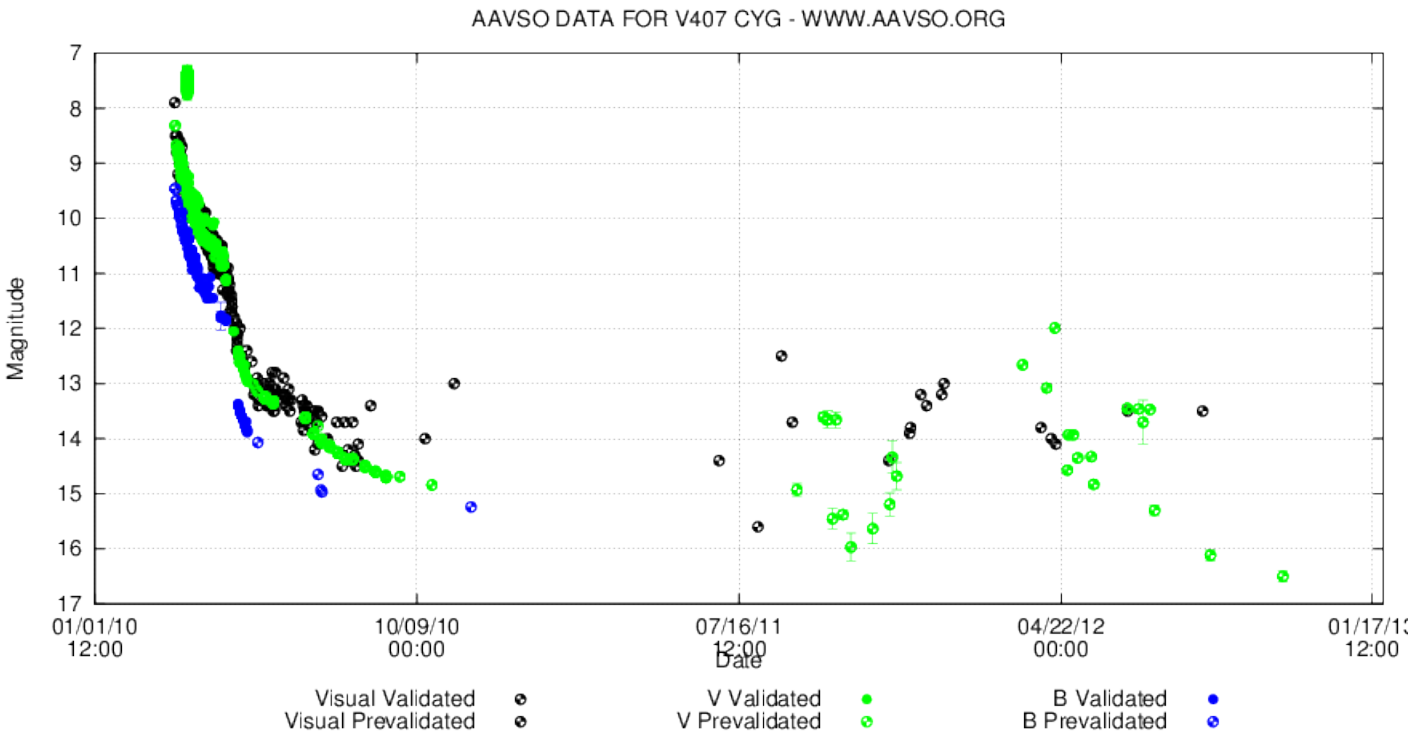
M&D (1947)

Nova Cygni 2010 (V407 Cyg)

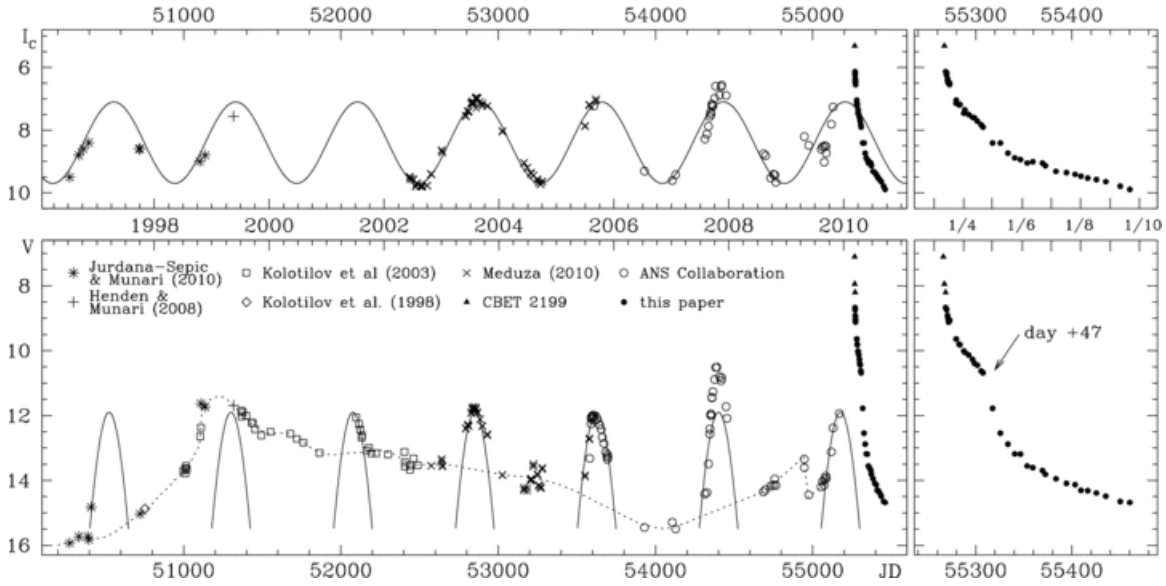


Discovered on 2010 March 10 at *V* = 7.6 (see Munari et al. 2010).

Light Curve of V407 Cyg (2010-Present)

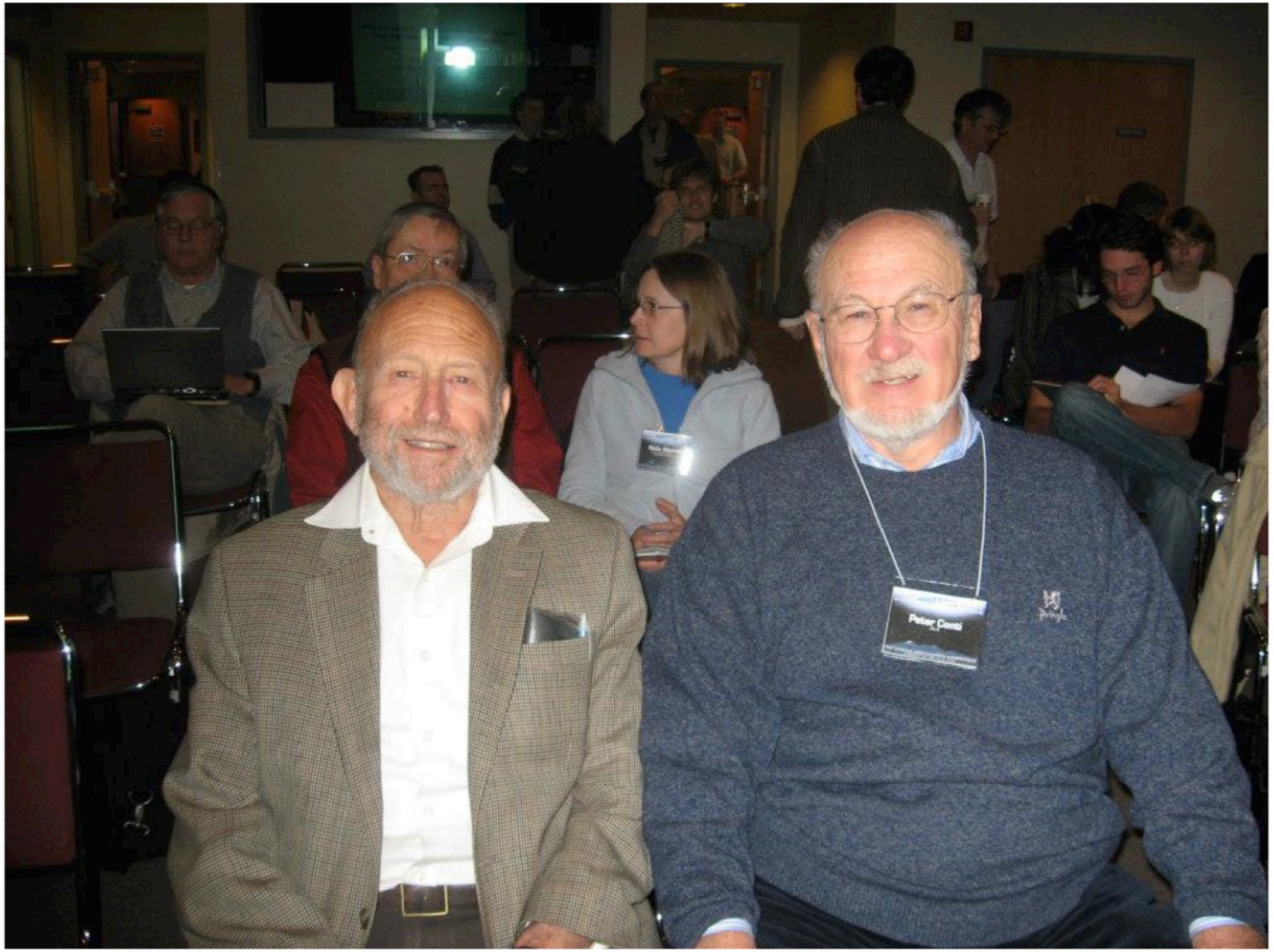


Photometric evolution of V407 Cyg (1996-2011)



Munari et al. (2011)


28


Peter Denti

The ApJ (or Annual Reviews)
still puts everyone
To sleep even if they were
looking at a
Catalog.

George on his 83rd Birthday