ϵ NORMAE ($\alpha = 16^h 19^m 8$; $\delta = -47^\circ 20'$; Mag. 4.7; Class B4)

Gr. M. T.	Vel. km.	Observer	Measured by
1908 July 23.565	+ 2 + 7 + 4	Paddock	Sanford Olivier Miss Hobe 7
1911 May 16.780	- 14 - 10	Paddock	Mrs. Moore Miss Hobe 8
May 29.728	- 13 - 11	Moore	Mrs. Moore 2 Miss Hobe 5
June 12.710	-144) + 80)		Miss Hobe 8 double lines 10
1912 May 25.754	+ 20 + 4	Sanford	Mrs. Moore Miss Hobe 3, H γ double?
1915 June 6.736	+ 19 + 14	Scott	Wilson 4, 1 prism Scott 3
Aug. 17.566	+ 85) -119) + 84) - 87)		Scott 8, double, 1 prism Wilson 2, double

The spectrum contains broad lines of hydrogen and helium. On the spectrograms of June 12, 1911, and August 17, 1915, both spectra appear; while on those of May 29, 1911, May 25, 1912, and June 6, 1915, the lines are hazy, with the appearance of being double. The separation, however, is not sufficient to permit of approximate measurement.

κ SCORPII ($\alpha = 17^h 35^m 6$; $\delta = -38^\circ 59'$; Mag. 2.5; Class B2)

Gr. M. T.	Vel. km.	Observer	Measured by
1904 May 31.704	-21	Palmer	Miss Hobe 3, III prisms
1907 July 30.529	-25 -36	Paddock	Curtis 3, III prisms Miss Hobe 3
Sept. 7.503	+ 2 + 18	Paddock	Curtis 3, III prisms Miss Hobe 3, mean of 2 measures
1911 May 18.828	- 9 - 9 - 5	Moore	Mrs. Moore 4 Miss Hobe 3 Moore 3
July 31.659	+45 +45 +36	Paddock	Sanford 3 Moore 3 Miss Hobe 3, mean of 2 measures

FOUR STARS WHOSE RADIAL VELOCITIES ARE VARIABLE

Of the stars whose radial velocities are being determined by the D. O. Mills Expedition to the Southern Hemisphere a number observed during the past year give indications of having variable velocities. For several of these the observed variations are such as to make a confirmation by further observations desirable. The range observed for four stars is sufficient, however, to remove all doubt as to the reality of this variation, and for these the necessary data are given below. Except where noted the spectrograms were obtained with a one-prism spectrograph. The number of lines from which the radial velocity was determined follows the measurer's name.

Gr. M. T.	Vel. km.	Observer	Measured by
1912 June 10.769	-21 -17	Moore	Moore 3 Miss Hobe 3
1915 June 20.767	-35 -27	Wilson	Wilson 10, 1 prism Scott 12
June 22.788	-24 -12	Scott	Wilson 10, 1 prism Scott 9

The spectrum contains rather broad lines of hydrogen and helium. A comparison of the spectrograms of May 18 and July 31, 1911, on the Hartmann engine checks the difference in velocity indicated above for these two observations. The lines on the three plates obtained with three-prism dispersion are very broad, and the results from these spectrograms are therefore entitled to small weight.

A. G. C. 29075 ($\alpha = 21^h 6^m 6$; $\delta = -39^\circ 50'$; Mag. 5.3; Class F5)

Gr. M. T.	Vel. km.	Observer	Measured by
1912 June 30.858	-40.5 -40.6 -41.9	Sanford	Mrs. Moore Moore 15 s Moore 14 s
1913 June 7.927	+ 0.7 - 4.3) -85.1)	Sanford	Mrs. Moore 9 s Moore Stronger 11 s
Sept. 26.603	-50.8 -45.4	Sanford	9 s Moore 11 s
Oct. 17.583	-46.7 -42.1	Sanford	10 s Moore 7 s

The spectra of both components are visible on the plate of June 7, 1913. That of the stronger component only was measured by one of the observers. The last three plates are underexposed, and the last one is so faint that the results from it are entitled to smaller weight than those from the other measures.

J. H. MOORE.

MOUNT HAMILTON,
June 1, 1916.

A. G. C. 8815 ($\alpha = 6^h 57^m 0$; $\delta = -25^\circ 4'$; Mag. 5.8; Class B3)

Gr. M. T.	Vel. km.	Observer	Measured by
1915 Mar. 14.559	+12 + 6 + 9	Wilson	Sanford 10 Scott 8 Wilson 8
Oct. 19.861	-11 -13	Scott	Wilson 7, II prisms Scott 5
Oct. 25.853	-11 - 7	Wilson	Wilson 9 Scott 6
Nov. 10.783	+53 +58	Wilson	Wilson 11 Scott 12

The spectrum contains several good lines for either one- or two-prism dispersion, the principal ones being of hydrogen, helium, calcium and magnesium.

A. G. C. 10211 ($\alpha = 7^h 44^m 5; \delta = -46^\circ 22'; \text{Mag. } 5.3;$
Class B2)

Gr. M. T.	Vel. km.	Observer	Measured by	
1912 Feb. 11.679	+19	Paddock	Sanford	3, II prisms
	+17		Mrs. Moore	1
Dec. 6.778	+17	Sanford	Mrs. Moore	3, II prisms
	+17		Sanford	3
1913 Dec. 26.722	+87		Sanford	3, II prisms
	+90		Wilson	
1916 Feb. 21.560	+4		Wilson	8
	+13		Scott	8
Feb. 24.660	+41		Wilson	12
	+52		Scott	10

The lines of hydrogen and helium upon which the measures depend are rather broad for the dispersion of two prisms. The character of the lines appears to change.

K VELORUM ($\alpha = 9^h 14^m 7; \delta = -50^\circ 38'; \text{Mag. } 5.3;$ Class A)

Gr. M. T.	Vel. km.	Observer	Measured by	
1913 Feb. 11.744	+86	Sanford	Mrs. Moore	2, II prisms
	+89		Moore	2
1914 Mar. 19.660	+105±		Wilson	1, II prisms
	+110±		Campbell	1
	+124±		Scott	1
Apr. 16.601	+44		Wilson	2, II prisms
	+45		Sanford	2
	+24		Scott	2, mean of 2 measures
1916 Feb. 16.760	+17		Wilson	5
	+20		Scott	4
Feb. 23.596	+80		Wilson	7
	+98		Scott	6

With two-prism dispersion the lines of hydrogen and magnesium are rather difficult, as the H_γ is broad and the 4481 line is faint. On the spectrograms obtained with the one-prism spectrograph the hydrogen lines are fairly sharp, and their measures are entitled to more weight than those of the higher dispersion spectrograms.

χ^2 HYDRAE ($\alpha = 11^h 1^m 1; \delta = -26^\circ 45'; \text{Mag. } 5.6;$ Class B8)

Gr. M. T.	Vel. km.	Observer	Measured by	
1915 June 24.506	— 57	Scott	Wilson	2
	— 56		Scott	2, 4, mean of two
June 25.483	+134	Scott	Wilson	3, 5, mean of two
	+156		Scott	5, 5, mean of two
July 6.497	+95	Scott	Wilson	2, 2, mean of two
	+68		Scott	2, 4, mean of two

The spectrum contains broad lines of hydrogen, fair magnesium and very weak helium lines. The helium lines are not in general measurable.

RALPH E. WILSON.

OBSERVATORY OF THE D. O. MILLS EXPEDITION,
SANTIAGO, CHILE,
March, 1916.

RS SAGITTARII, ALGOL VARIABLE AND SPECTROSCOPIC BINARY

RS *Sagittarii* ($18^h 11^m 0, -34^\circ 8'$), a variable star of the *Algol* type according to the *Second Catalogue of Variable Stars* (*Annals Harvard College Observatory*, 55, 22, 1907), was observed along with a group of other variables in 1909 at Santiago, Chile, for the purpose of finding variable radial velocity. A single prism and 16-inch camera were used, these giving the lowest dispersion then available in the equipment of the D. O. Mills Expedition. Nine plates of RS *Sagittarii* were obtained. Preliminary measures of the wide lines of the Class A spectrum shown by this star give

a range of 160 km., that is, from +80 km. to —80 km. This result indicates that the star is a spectroscopic binary, one body eclipsing the other, in view of the nature of the light curve. Definitive measures of velocity will be published later. Further observations and measures of this star in 1915 with one-prism dispersion, by Dr. R. E. Wilson at Santiago, corroborate this variation of velocity, giving a range of 140 km.

G. F. PADDOCK.

June, 1916.