

The Ross Variable Stars Revisited. II

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Abstract Better magnitudes and epochs have been determined for 190 of the 379 confirmed and suspected variable stars discovered by Ross from 1925 to 1931. Accurate positions have been determined for those objects for which unambiguous identifications had been lacking. These include a number of cases for which Ross's published coordinates have large errors.

1. Introduction

This is the second of two papers giving identifications and improved magnitudes and epochs for the suspected variable stars discovered by F. Ross of Yerkes Observatory in the period 1925 and 1931. Paper I (Osborn and Mills 2011) discussed those stars in Ross's first, second, seventh, eighth, ninth, and tenth lists of variables (Ross 1925, 1926a, 1928b, 1929, 1930, 1931). This paper gives our results for the remaining stars—those in Ross's third, fourth, fifth, and sixth lists (Ross 1926b, 1927a, 1927b, 1928a).

The rationale for this work along with our methods were described in Paper I and will not be repeated here. We will merely say that we have re-examined the original photographic plates used by Ross for his discoveries to unambiguously identify the objects and determine better magnitudes and epochs of observation than those published by Ross. The only change in our procedure was to include data from the *Third U.S. Naval Observatory CCD Astrograph Catalog* (UCAC3; Zacharias *et al.* 2010) in determining our approximate B magnitudes.

2. Results

Our results are presented in Table 1. The columns give, respectively, the Ross star number, the corresponding variable star name (and, when needed, another identification below), the Julian Dates (actually JD – 2400000.0) and B magnitudes for the two compared plates. The epochs are geocentric, that is, they have not been converted to heliocentric ones. Following each table are notes for many of the stars; these give such information as errors detected in Ross's papers and comments on the identification.

Of the 190 stars considered in this paper, 159 are named variables, twenty-two are suspected variables listed in the NSV catalogue (Samus *et al.* 2009),

seven were observations of minor planets, one is a missing BD star, and one a variable BL Lac object (Baument and Cudworth 1981). Of the NSV objects, we do not see the variation seen by Ross for R118 using the same plate material, and the supposed variations of R119 and R164 may be due to plate flaws.

The case of R148 is interesting, this being a listing in the *Bonner Durchmusterung* catalogue (Argelander 1903), BD+34°531, for which Ross found there is no corresponding star (irrespective of the fact that Ross's 1875 coordinates were incorrectly precessed from the BD's 1855 position). His note card for this star has the comment "Kustner writes this was in the sky certainly on Oct 21, 1856." To us it seems possible that BD+34°531 resulted from some error by the compilers of the BD. The star with the same number in the +33° zone, BD+33°531, lies at the same right ascension and just slightly south. The following compares the BD catalogue entries for the two stars:

BD+34°531 (mag. = 9.3):	R.A. 02 ^h 43 ^m 39.5 ^s , Dec. +34°01.6' (revised coordinates)
	R.A. 02 ^h 43 ^m 40.5 ^s , Dec. +34°00.6' (originally published coordinates)
BD+33°531 (mag. = 9.3):	R.A. 02 ^h 43 ^m 40.7 ^s , Dec. +33°57.5'

That both stars lie so close to the zone boundary, the revision in the position for the missing star, and the similarity in number, magnitude, and coordinates for the two stars suggest confusion with the data may have led to two catalogue entries from the observations of just one object.

With this paper, all the Ross variables have been reviewed and we can now expand upon Marsden's (2007) comments concerning the Ross observations that were of minor planets. For the fifteen such cases, the average difference between the actual time of exposure of the plate and Marsden's computed time was 0.0d with an RMS dispersion of 0.15d, strong confirmation that our Julian Dates have been calculated correctly. The average difference between our pseudo-B magnitudes and the expected V magnitudes for the minor planets is 0.9 mag, or 0.75 if one discrepant value is omitted. Not only is this in good agreement with the average (B-V) of around 0.8 for minor planets (Zellner *et al.* 1975), it supports both that Ross's estimates were visual magnitudes and that our estimates are approximately on the B system.

As mentioned in Paper I, Ross's note cards contain comments for a number of the stars, including some visual observations by him or his colleagues with the Yerkes 40-inch refractor. This information is presented in an appendix, Table A, so it will not be lost.

3. Corrections to paper I

Soon after the publication of Paper I, a reader brought to our attention

several errors. Most involve the ten stars we had noted as “not listed in NSV catalog.” We had used SIMBAD to check for cross identifications between the Ross variables and NSV objects, but it was pointed out that a number of NSV objects had yet to be incorporated into the SIMBAD database. Using the on-line version of the *General Catalogue of Variable Stars* (<http://www.sai.msu.su/gcvs/cgi-bin/search.htm>) all ten objects turned out to indeed have NSV numbers. These identifications and a few other corrections to Paper I are given Table 2.

4. Acknowledgements

This research made use of the SIMBAD database, operated at CDS, Strasbourg, France, and the Digitized Sky Surveys (DSS) produced at the Space Telescope Science Institute under U.S. Government grant NAG W-2166. The DSS images are from photographic data obtained using the Oschin Schmidt Telescope on Palomar Mountain and the UK Schmidt Telescope through funding provided by The National Geographic Society, the National Science Foundation, the Sloan Foundation, the Samuel Oschin Foundation, the Eastman Kodak Corporation, and the UK Science and Engineering Research Council.

References

- Argelander, F. W. A. 1903, *Bonner Durchmusterung des Nordlichen Himmels*, 2nd corrected ed. (*BD Catalogue*), A. Marcus and E. Weber's Verlag, Bonn.
- Baumert, J. H., and Cudworth, K. 1981, *Inf. Bull. Var. Stars*, No. 2039, 1.
- Bedient, J. R. 2003, *Inf. Bull. Var. Stars*, No. 5478, 1.
- Bidelman, W. P., and Cudworth, K. 1981, *Inf. Bull. Var. Stars*, No. 2055, 1.
- Bidelman, W. P., and van Altena, W. F. 1972, *Inf. Bull. Var. Stars*, No. 744, 2.
- Harwood, M. 1960, *Ann. Sterrewacht Leiden*, **21**, 387.
- Marsden, B. G. 2007, *Perem. Zvezdy*, **27**, 3.
- Osborn, W., and Mills, O. F. 2011, *J. Amer. Assoc. Var. Star Obs.*, **39**, 186.
- Ross, F. E. 1925, *Astron. J.*, **36**, 99 (first list of variables).
- Ross, F. E. 1926a, *Astron. J.*, **36**, 122 (second list of variables).
- Ross, F. E. 1926b, *Astron. J.*, **36**, 167 (third list of variables).
- Ross, F. E. 1926c, *Astron. J.*, **36**, 172 (third list of proper motion stars).
- Ross, F. E. 1927a, *Astron. J.*, **37**, 91 (fourth list of variables).
- Ross, F. E. 1927b, *Astron. J.*, **37**, 155 (fifth list of variables).
- Ross, F. E. 1928a, *Astron. J.*, **38**, 99 (sixth list of variables).
- Ross, F. E. 1928b, *Astron. J.*, **38**, 144 (seventh list of variables).
- Ross, F. E. 1929, *Astron. J.*, **39**, 140 (eighth list of variables).
- Ross, F. E. 1930, *Astron. J.*, **40**, 34 (ninth list of variables).
- Ross, F. E. 1931, *Astron. J.*, **41**, 88 (tenth list of variables).

Samus, N. N., *et al.* 2012, *General Catalogue of Variable Stars*, published online at <http://www.sai.msu.su/gcvs/cgi-bin/search.htm>.

Zacharias, N., *et al.* 2010, *Astron. J.*, **139**, 2184.

Zellner, B., Wisniewski, W. Z., Andersson, L., and Bowell, E. 1975, *Astron. J.*, **80**, 986.

Table 1. Identifications and improved data for Ross Variables 105–294.

Ross	Variable / Other identification	First JD 2400000+	B	Second JD 2400000+	B
105	RV Del	17062.949	14.2	24384.707	13.1
106	RX Del	17062.949	13.1	24384.707	15.2:
107	RZ Del	17062.949	14.4	24384.707	13.1
108	SS Del	17062.949	13.6	24384.707	<16.6
109	ST Del	17062.949	13.3	24384.707	12.5
110	V830 Cyg	18447.816	13.5	24460.540	14.8
111	SW Del	17062.949	15.7	24384.707	13.8
112	V833 Cyg	18447.816	14.6	24460.540	13.9
113	GR Cyg	18447.816	13.0	24460.540	15.7:
114*	NSV 13523 2MASS 21051394+3837134	18447.816	<15.6	24460.540	14.1
115*	NSV 13558 2MASS 21080005+3734183	18447.816	<15.3	24460.540	14.4
116	DU Cyg	18447.816	13.8	24460.540	12.1
117	NSV 13612 2MASS 21133238+4258055	18447.816	14.4	24460.540	15.4
118*	NSV 13622 2MASS 21151328+3828514	18447.816	15.4	24460.540	15.5
119*	NSV 13624 2MASS 21153512+3639576	18447.816	15.5:	24460.540	15.3
120	V837 Cyg	18447.816	15.1	24460.540	14.4
121	V1812 Cyg	18447.816	13.7	24460.540	16.7
122	V1338 Cyg	18447.816	<15.2	24460.540	14.7
123	EL Peg	17791.674	13.5	24475.517	<16.0
124	CX Peg	17791.674	14.1	24475.517	<16.0
125	AX Peg	17791.674	12.7	24475.517	11.8
126	GW Cyg	19275.660	15.7	24413.628	13.9
127*	AQ Lac	18542.776	13.1	24413.628	<14.9
128	EL Lac	18542.776	13.5	24413.628	<14.9
129	AS Lac	19275.660	12.8	24413.628	<16.8
130*	AV Lac	19275.660	13.6	24413.628	<15.6

Table continued on following pages

Table 1. Identifications and improved data for Ross Variables 105–294, cont.

<i>Ross</i>	<i>Variable / Other identification</i>	<i>First JD 2400000+</i>	<i>B</i>	<i>Second JD 2400000+</i>	<i>B</i>
131	UY Lac	18542.776	11.6	24413.628	14.0
132	V458 Lac	18542.776	12.5	24413.628	13.3
133	DG Cas	17793.658	14.2	24473.565	15.5
134	FK Cas	17793.658	14.2	24473.565	13.0
135	FN Cas	17793.658	13.5	24473.565	15.3:
136*	NSV 308			24468.681	13.5
	Minor planet (137) <i>Meliboca</i>				
137	AH Per	17832.732	13.9	24497.569	<16.4
138	AI Per	17832.732	13.5	24497.569	15.3
139	AK Per	17832.732	12.8	24497.569	<16.8
140	AL Per	17068.872	14.5	24494.628	13.7
141	GH Per	17911.641	12.4	24557.563	13.6
142	EV Tau	17910.642	12.8	24497.668	<14.5
143	DQ Tau	17562.706	12.3	24768.666	15.7
144*	V1800 Ori	17562.706	15.8	24768.666	<16.8
145	HW Mon	16795.951	12.4	24557.645	<14.4
146	UW Pup	16795.951	13.6	24557.645	<15.2
147	AO Gem	17698.616	12.5	24557.740	16.5
148*	BD+34°531	-755.5		24497.569	<15.4
149	NSV 1351	19665.796	11.2	24577.543	14.7
	2MASS 03490755+1430533				
150	EP Ori	16737.913	14.6	24577.587	13.1
151	FG Ori	16737.913	11.5	18955.805	16.4
152	V1802 Ori	16737.913	13.8	24577.587	<16.9
153	DG Ori	16737.913	13.3	24577.587	<15.4
154	AQ Aur	16736.844	<15.9	24578.573	14.6
155	DU Aur	16736.844	12.8	24578.573	<16.1
156	V1794 Ori	17679.590	15.1	24577.643	12.5
157	EQ Aur	19503.592	13.7	24578.649	13.0
158	AZ Mon	16937.685	12.6	24584.670	<14.5
159	AH Mon	16937.685	15.0	24584.670	12.9
160*	NSV 3506	16937.685	14.5	24584.670	<15.9
	2MASS 07172610+0137388				
161	HU Mon	16937.685	15.7	24584.670	12.7
162	YZ Pup	16885.761	13.1	24588.603	11.6
163	FF Pup	16885.761	<14.4	24588.603	13.0

Table continued on following pages

Table 1. Identifications and improved data for Ross Variables 105–294, cont.

Ross	Variable / Other identification	First JD 2400000+	B	Second JD 2400000+	B
164*	NSV 3982 2MASS 08173168+0602094	20566.684	14.2	24591.691	15.2
165	V425 Hya	20566.684	13.9	24591.691	14.7
166*	NSV 4168 Near 08:41:37, +72:27.6	19151.703	<15.7	24579.689	13.3
167	VX Vir	17623.693	13.8	24624.706	15.5
168*	NSV 6188 Minor planet (106) <i>Dione</i>	16889.8	14.1		
169	TW UMa	17324.7	12.0	24641.699	13.7:
170	AA Vir	16889.8	13.8	24648.667	15.6
171	TW Lib	16971.751	<16.0	24639.756	12.7
172	WX Ser	18064.655	12.5	24624.765	<15.0
173	UU Lib	16994.791	17.1:	24646.787	12.6
174	V872 Sco	16994.791	<16.6	24646.787	13.5
175	AY Her	16586.707	14.6	24651.718	12.4
176	KT Oph	17686.845	<15.9	24671.814	13.3
177	KU Oph	17686.845	<16.0	24671.814	13.4
178	VZ Ser	17686.845	14.6	24671.814	<15.5
179	YZ And	19630.720	12.2	24886.560	14.6
180	GV Cas	18154.727	13.2	24855.547	14.0
181	TZ Psc	18995.519	<14.2	24904.572	11.6
182	BB Ari	18619.618	<16.8	24846.601	13.2
183	V413 Per	19743.601	<17.2:	24914.572	14.3
184*	NSV 1224	17859.672	16.6	24855.708	14.7
185	KL Eri	19027.584	14.0	24879.635	15.2
186	XY Tau	19004.600	16.4:	24874.613	13.0
187	NV Per	20457.619	14.5	24904.654	<16.2
188	CO Ori	18622.795	11.2	24878.708	13.1
189	YY Tau	18622.795	15.7:	24878.708	13.6
190*	NSV 2777 Minor planet (714) <i>Ulula</i>	18622.795	13.4		
191	EO Ori	16938.688	14.8	24943.1	13.1
192	DD Ori	16938.688	11.8	24943.1	12.8
193	FT Mon	17616.693	12.8	24879.732	14.5
194*	NSV 2975 2MASS 06285910+0819492	16938.688	14.4	24943.1	13.7

Table continued on following pages

Table 1. Identifications and improved data for Ross Variables 105–294, cont.

<i>Ross</i>	<i>Variable / Other identification</i>	<i>First JD 2400000+</i>	<i>B</i>	<i>Second JD 2400000+</i>	<i>B</i>
195	VX Mon	16938.688	14.6	24943.1	12.9
196	EE Gem	16938.688	<16.4	24943.1	13.9
197	AY Mon	16938.688	15.7	24943.1	12.8
198	UZ Mon	18216.922	11.8	24907.722	<14.9
199	VZ CMi	18216.922	<14.4	24907.722	12.0
200*	OI 090.4	20569.668	14.1	24886.845	15.4
201	ST Cnc	20569.668	15.9	24886.845	14.0
202	SU Cnc	20569.668	12.5	24886.845	<14.3
203	VW Cnc	20569.668	16.4	24886.845	13.3
204*	NSV 4018			24948.607	13.2
	Minor planet (554) <i>Peraga</i>				
205*	TU Hya	20567.684	11.5	24913.729	<15.9
206*	NSV 5338	18406.601	12.1		
	Minor planet (26) <i>Proserpina</i>				
207*	AS Her	18447.681	10.1	24684.703	14.7
208	V2582 Oph	18447.681	<15.6	24684.703	13.3
209	V440 Oph	18447.681	12.6	24684.703	<15.6
210	V2588 Oph	18447.681	14.0	24684.703	15.1
211	BI Her	17656.887	13.9	24668.765	<16.0
212	MW Her	17656.887	<16.6	24668.765	12.4
213	V374 Oph	17656.887	13.7	24668.765	<16.0
214	CY Aql	16653.832	13.9	24830.516	15.1:
215	EM Aql	16653.832	16.4	24830.516	12.8
216	DM Aql	16653.832	11.7	24830.516	14.8
217	ES Aql	16653.832	13.0	24830.516	<15.5
218*	V986 Aql	16653.832	14.6	24830.516	<14.7
219	V607 Aql	16653.832	13.6	24830.516	<15.5
220	GT Aql	16653.832	14.6	24830.516	<14.9
221	EG Peg	19237.686	13.2	24849.540	<15.7
222	VX Cep	18179.694	12.0	24851.551	<14.8
223	EY Peg	17471.621	14.6	24841.515	13.3
224	NSV 14639	20072.558	14.0	24879.531	16.2
	2MASS J23364663+1643317				
225*	NSV 14640	20072.558	14.5	24879.531	<16.8
	2MASS J23364891+1643341				
226	V419 Peg	20072.558	15.2	24879.531	14.2

Table continued on following pages

Table 1. Identifications and improved data for Ross Variables 105–294, cont.

Ross	Variable / Other identification	First JD 2400000+	B	Second JD 2400000+	B
227	EO Cas	18179.694	15.6	24851.551	13.5
228*	DU Peg	19630.720	12.5	24886.560	15.4
229	TY Cnc	20576.610	13.7	24918.639	12.6
230*	NSV 4333 Minor planet (389) <i>Industria</i>	20576.610	12.4		
231*	NSV 4352 Minor planet (242) <i>Kriemhild</i>	20576.610	13.9		
232	SW Cnc	20576.610	12.9	24918.639	11.7
233	AL Hya	20576.610	14.6	24918.639	12.4
234	VX Crv	16963.717	13.4	24994.676	<15.9
235	U Crv	16963.717	11.4	24994.676	15.9
236	V Crv	16963.717	12.8	24994.676	<15.8
237	V429 Sct	18525.643	14.2	25142.589	16.5
238	CI Sct	18525.643	14.4	25142.589	15.4
239*	NSV 11532 UCAC3 162–217813	18525.643	14.6	25142.589	14.8
240	V358 Sgr	18525.643	14.3	25142.589	15.2
241	NSV 11649 2MASS 19011546–1148397	18525.643	13.5	25142.589	15.4
242	V920 Sgr	19980.642	<13.8	25127.587	12.7
243*	CN Aql	18525.643	12.1	25142.589	<14.0
244*	V1940 Sgr	19980.642	12.2	25127.587	14.5
245	EK Sgr	18525.643	13.4	25142.589	14.6
246	V923 Sgr	19980.642	<13.2	25127.587	12.9
247	V918 Aql	18525.643	13.6	25142.589	<14.6
248	CU Aql	18525.643	12.2	25142.589	<13.7
249*	NSV 11953 2MASS 19221196+2234390	16676.835	13.2	25125.646	<15.7
250	DI Aql	19980.642	<13.9	25127.587	12.3
251	XY Vul	16676.835	12.9	25125.646	<14.5
252*	V976 Aql	17038.936	14.2	25174.566	<16.2
253	KU Aql	17038.936	<15.5	25174.566	13.8
254	V1137 Aql	17038.936	14.6	25174.566	15.4
255	CE Vul	16676.835	13.5	25125.646	14.5:
256	V452 Aql	17038.936	14.7	25174.566	<15.5
257	V453 Aql	17038.936	<15.5	25174.566	15.1

Table continued on following pages

Table 1. Identifications and improved data for Ross Variables 105–294, cont.

<i>Ross</i>	<i>Variable / Other identification</i>	<i>First JD 2400000+</i>	<i>B</i>	<i>Second JD 2400000+</i>	<i>B</i>
258	LR Aql	17038.936	14.5	25174.566	<15.9
259	V536 Aql	17038.936	14.1	25174.566	15.5
260	V827 Aql	17038.936	14.8	25174.566	<15.9
261	MU Aql	17038.936	12.7	25174.566	14.4
262*	DY Aql	20427.606	11.8	25138.573	11.0
263	QX Aql	19658.588	13.3	25127.663	<14.7
264	SZ Cap	20427.606	<15.2	25138.573	12.4
265	NSV 12804 2MASS 20071642–1315180	20427.606	14.0	25138.573	13.0
266	SS Cap	20427.606	<16.0	25138.573	12.5
267	V581 Aql	19658.588	13.2	25127.663	15.2
268	QY Aql	17888.664	13.0	25142.704	11.2
269	ST Cap	20427.606	12.3	25138.573	<15.1
270	V586 Aql	17888.664	13.0	25142.704	15.1
271*	NSV 12941 2MASS 20144760+1454058	17888.664	14.2	25142.704	<15.6
272	V499 Aql	20427.606	11.3	25138.573	12.1
273	RU Del	17888.664	15.2	25142.704	12.4
274	QZ Aql	17888.664	<14.8	25142.704	13.6
275*	NSV 13012 2MASS 20200672+0805420	17888.664	13.1	25142.704	14.4
276	V335 Aql	19658.588	12.1	25127.663	14.7
277	EP Aql	18887.667	11.9	25175.551	<14.8
278	RW Del	17888.664	13.2	25142.704	14.5
279*	NSV 13086 2MASS 20263913+0852343	17888.664	<14.7	25142.704	13.6
280	NSV 13100 2MASS 20284168–0531369	18887.667	16.4	25175.551	14.4
281	CQ Del	17888.664	<16.1	25142.704	13.1
282	RY Del	17888.664	<15.5	25142.704	12.5
283	ET Aql	18887.667	14.2	25175.551	12.2
284*	V384 Cyg	20387.639	14.9	25176.561	12.3:
285	BT Aqr	18887.667	12.5	25175.551	11.7
286*	LN Cyg	20387.639	13.6	25176.561	13.7:
287*	NSV 13469 2MASS 21015589+3159129	20387.639	13.7	25176.561	12.7:

Table continued on following pages

Table 1. Identifications and improved data for Ross Variables 105–294, cont.

Ross	Variable / Other identification	First JD 2400000+	B	Second JD 2400000+	B
288*	DI Cyg	20387.639	12.6	25176.561	<13.7:
289	SX Del	18886.630	14.4	25128.597	13.1
290*	GQ Cyg	20387.639	<15.1	25176.561	11.8:
291*	V471 Cyg	20387.639	12.9	25176.561	12.2:
292	AS Peg	18886.630	11.8	25128.597	15.5
293	AP Peg	18886.630	12.3	25128.597	14.9
294	AY Peg	19713.684	14.9	25128.677	13.6

**Notes:*

R114: Marsden (2007) showed this suspected variable was not a minor planet observation.

R115: Marsden (2007) showed this suspected variable was not a minor planet observation.

R118: Probably not variable. Ross indicated a variation of two magnitudes between his two epochs, but we do not see a brightness change for the star he marked as the variable on his finding chart, nor for any nearby star, on these same plates.

R119: Probably not variable. The brightening detected by Ross on the 1909 plate taken with the 10-inch camera seems to result from a plate flaw—a dark smudge that does not look like a star image. No brightening was seen on the 6-inch plate. Ross (1926c) discussed plate flaws found on his plates in his paper that gave the proper motion stars detected in the R119 field.

R127: Ross published his fainter magnitude as 15 but his note card has 15(?). We do not believe the variable was seen but that Ross detected the close companions to the variable.

R130: Ross' published declination has a 28' error but his finding chart and our re-examination of the plates confirm this identification.

R136: Bidelman and Cudworth (1981), Bedient (2003), and Marsden (2007) showed object seen in 1925 was a minor planet.

R144: Marsden (2007) showed this suspected variable was not a minor planet observation.

R148: This special case is discussed in the paper.

R160: Marsden (2007) showed this suspected variable was not a minor planet observation.

R164: The apparent variability is probably due to a plate flaw. The star image is brighter on the 1915 10-inch plate, but not on the 6-inch plate taken simultaneously.

R166: Marsden (2007) showed this suspected variable was not a minor planet observation.

R168: Marsden (2007) showed object seen in 1905 was a minor planet.

R184: Ross' published magnitudes for the two epochs are reversed.

R190: Marsden (2007) showed object seen in 1909 was a minor planet.

R194: Only Ross' 10-inch plate could be located so we could not confirm the variability on the second plate set.

R200: Baumert and Cudworth (1981) identified this as the BL Lac object Ohio I 090.4.

R204: Marsden (2007) showed object seen in 1927 was a minor planet.

R205: Date of second observation was 1927 Feb 1, not Feb 2 as published by Ross.

Table continued on next page

Table 1. Identifications and improved data for Ross Variables 105–294, cont.

Notes (continued):

R206: *Bedient (2003) and Marsden (2007) showed object seen in 1909 was a minor planet.*

R207: *Ross inverted the identifications of variable and comparison star on his finding chart.*

R218: *Marsden (2007) showed this object was not a minor planet observation. We found Ross' published coordinates are in error. His finding chart and our re-examination of the plates confirm this identification.*

R225: *Marsden (2007) showed this suspected variable was not a minor planet observation.*

R228: *Ross' published magnitudes for the two epochs are reversed.*

R230: *Marsden (2007) showed object seen in 1915 was a minor planet.*

R231: *Marsden (2007) showed object seen in 1915 was a minor planet.*

R239: *This star is very close to QT Sct, but a careful comparison of the finding chart for that object (Harwood 1960) with the field suggests R239 is not the same object as QT Sct.*

R243: *Ross' published declination has an 11' error but re-examination of the plates by both Bidelman and van Altena (1972) and ourselves as well as the Ross finding chart confirm this identification.*

R244: *Ross' published declination has a 2.3° error but his finding chart and our re-examination of the plates confirm this identification.*

R249: *Marsden (2007) showed this suspected variable was not a minor planet observation.*

R252: *Ross' published declination has a 30' error but his finding chart and our re-examination of the plates confirm this identification.*

R262: *Ross' published position has a 21' error but his finding chart and our re-examination of the plates confirm this identification.*

R271: *Marsden (2007) showed this suspected variable was not a minor planet observation.*

R275: *The variable may be the star slightly north of our adopted identification.*

R279: *Marsden (2007) showed this suspected variable was not a minor planet observation.*

R284: *Ross' published right ascension has a 21' error but his finding chart confirms this identification. The 1927 Oct 22 plates could not be located and the listed magnitude for this date is based on Ross' estimate.*

R286: *The 1927 Oct 22 plates could not be located but Ross' finding chart confirms this identification. The listed magnitude for this date is based on Ross' estimate.*

R287: *The 1927 Oct 22 plates could not be located but Ross' finding chart confirms this identification. The listed magnitude for this date is based on Ross' estimate. The variability was confirmed on a 1922 Nov. 26 plate (JD 2,423,385.535) which gave a magnitude of 12.6.*

R288: *The 1927 Oct 22 plates could not be located but Ross' finding chart confirms this identification. The listed magnitude for this date is based on Ross' estimate.*

R290: *The 1927 Oct 22 plates could not be located but Ross' finding chart confirms this identification. The listed magnitude for this date is based on Ross' estimate.*

R291: *The 1927 Oct 22 plates could not be located but Ross' finding chart confirms this identification. The listed magnitude for this date is based on Ross' estimate.*

Table 2. Corrections to published data in paper I, Osborn and Mills (2011).

<i>Ross</i>	<i>Corrected data</i>
29	JD of 15.0 mag. observation is 2418122.720; Ross's published date was incorrect
66	Star is NSV 11974
67	Star is NSV 12000
72	Star is NSV 12194
76	Star is NSV 12573
103	Star is NSV 14720
295	Star is NSV 00670
300	Star is NSV 10725; optical transient (not X-ray) source ROTSE1 J182240.62+293115.0
303	Star is NSV 11012
317	Star is NSV 12257
368	Star is NSV 06117

Appendix

Ross's note cards for his earlier discoveries contain entries showing that observations of some of the suspected variables were made with the 40-inch refractor by him or collaborators. The following table reproduces these notes verbatim, omitting the common note that the object might be an asteroid. A "v" refers to the variable while letters (a, b, m, n) refer to comparison stars that are indicated on the finding charts. For those cases where a visual magnitude estimate was made, we follow the reproduced comments with the approximate Julian Date of the observation and approximate V magnitude, derived by using modern magnitude values for the comparison stars.

Table A. Ross's notes and derived V magnitude estimates.

<i>Ross</i>	<i>Comments on Ross's note cards reproduced verbatim</i>	<i>JD</i>	<i>m(V)</i>
114	1925 Dec 7: 40" v = a = b (found by Sullivan on pl 73)	24492.6	12.9
137	1926 Nov 10: Nothing brighter than 16 ^m in this place	24830.6	<16
144	1926 Nov 10: b 1 ^m v 1 ^m m	24830.6	16:
152	1926 Nov 10: invis. <16 ^m	24830.6	<16
153	1926 Nov 10: v 0.5 ^m b	24830.6	12.1
158	1926 Nov 10: v quite red! b 3 v 2 a	24830.6	12.0
160	1926 Nov 10: m 3 v 1 n	24830.6	12.8