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A new variable of the δ Cephei type, the period of which seems to vary
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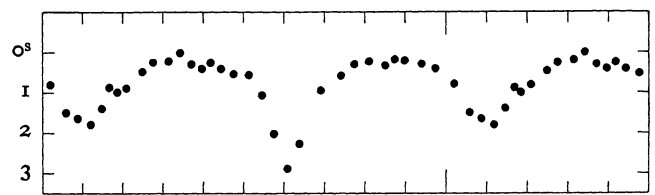
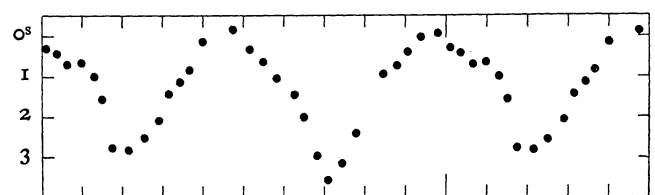
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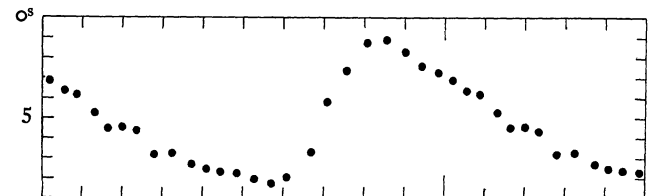
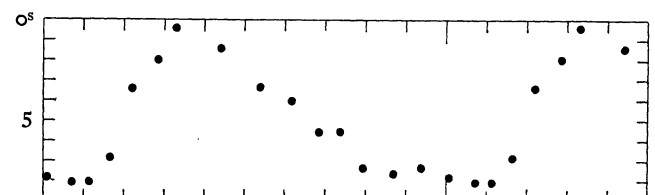
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Johannesburg P = '21554 (J.D. — 2420000)		
n	P	s
20	'0108	'782
20	'0728	'808
20	'1151	'810
17	'1672	'687
10	'2222	'342
20	'2840	'200
20	'3324	'042
20	'4434	'146
20	'5392	'337
20	'6190	'406
20	'6856	'558
20	'7394	'556
20	'7962	'736
20	'8698	'764
20	'9383	'736

Harvard P = '215528 (J.D. — 2400000)		
n	P	s
21	'0207	'314
21	'0560	'366
21	'0876	'384
21	'1317	'472
21	'1648	'551
21	'1982	'546
21	'2351	'565
21	'2787	'682
21	'3243	'676
21	'3739	'731
21	'4099	'755
21	'4447	'766
21	'4857	'777
21	'5296	'806
21	'5718	'825
21	'6106	'798
21	'6705	'671
21	'7102	'420
21	'7572	'266
21	'8066	'126
20	'8566	'111
21	'9031	'174
21	'9451	'239
21	'9857	'276



above: estimates on Johannesburg plates
below: „ „ Harvard „



above: estimates on Johannesburg plates
below: „ „ Harvard „

A new variable of the δ Cephei type, the period of which seems to vary,
by *Ejnar Hertzsprung*.

The star CPD — 47°1944,8^m.4, Sp. F8, 8^h7^m s.2, — 47°19'7 (1875) was found on Franklin-Adams plates to be sensibly brighter at J.D. 2426337^d.465 than 24^d.902 later.

The comparison stars used are

	C.P.D.	Jhbgs plates	Harv. plates	adopted pg magn.	Sp
		^m	^s	^{m'}	^m
a	— 47°1891	8.0	'00	'00	7.84 A2
b	— 47°1894	8.4	'34	'39	'64 8.48 A
c	— 47°1910	8.8	'56	'65	1.05 8.89 A0

J.D. means in this note: J.D. hel. M. astr. T. Grw.

The differences in provisional magnitude, m' , were determined by C. J. KOOREMAN from measures in the Schilt photometer on 6 plates taken with a grating in front of the objective.

The phases were computed from the formula

$$\text{phase} = \text{d}^{-1} \cdot 38567 \text{ (J.D. — 2400000)}.$$

My estimates on 528 Harvard plates were after their reduction divided into 3 equal groups. For each of these groups and for the 345 Johannesburg plates a sinusoid was derived according to least squares to fit the lightcurve.

TABLE I. (Harvard plates)

J.D. from 2414940 to 17712 mean 16501					J.D. from 2417864 to 20992 mean 19625					J.D. from 2420994 to 24198 mean 22124				
n		O	C	O—C	n		O	C	O—C	n		O	C	O—C
II	P	^s 0285	^s 476	^s 478 — '002	II	P	^s 0226	^s 592	^s 595 — '003	II	P	^s 0266	^s 613	^s 603 + '010
II		'0925	'503	— 15	II		'0814	'545	'612 — 67	II		'0972	'567	— 35
II		'1571	'600	+ 55	II		'1345	'661	'613 + 48	II		'1561	'624	'584 + 40
II		'1998	'547	'555 — 8	II		'2095	'654	'591 + 63	II		'1980	'598	'561 + 37
II		'2584	'531	'555 — 24	II		'2634	'556	'561 — 5	II		'2373	'513	'535 — 22
II		'3275	'548	'535 + 13	II		'3782	'473	'474 — 1	II		'2969	'493	'489 + 4
II		'3965	'492	'500 — 8	II		'4460	'354	'423 — 69	II		'3662	'455	'433 + 22
II		'4524	'445	'461 — 16	II		'5040	'380	'389 — 9	II		'4336	'355	'388 — 33
II		'5270	'429	'409 + 20	II		'5498	'406	'370 + 36	II		'4895	'350	'360 — 10
II		'6023	'325	'363 — 38	II		'6257	'369	'361 + 8	II		'5437	'331	'348 — 17
II		'6761	'385	'335 + 50	II		'6993	'374	'379 — 5	II		'5855	'346	'348 — 2
II		'7284	'331	'329 + 2	II		'7303	'407	'394 + 13	II		'6374	'375	'361 + 14
II		'7900	'326	'337 — 11	II		'7785	'441	'424 + 17	II		'7551	'475	'430 + 45
II		'8705	'355	'371 — 16	II		'8297	'455	'462 — 7	II		'8508	'515	'507 + 8
II		'9215	'417	'403 + 14	II		'8894	'525	'510 + 15	II		'9248	'514	'560 — 46
II		'9641	'415	'432 — 17	II		'9578	'525	'559 — 34	II		'9779	'574	'587 — 13

$C = {}^s443 + {}^s113 \sin 2\pi P + {}^s015 \cos 2\pi P$
 range: $2 \times {}^s114$
 max. at { phase ${}^s729 \pm {}^s014$ (m.e.)
 { J.D. $2416500.45 \pm {}^s036$ (m.e.)
 E = 0

$C = {}^s487 + {}^s082 \sin 2\pi P + {}^s097 \cos 2\pi P$
 range: $2 \times {}^s127$
 max. at { phase ${}^s612 \pm {}^s014$ (m.e.)
 { J.D. $2419624.58 \pm {}^s036$ (m.e.)
 E = 1205

$C = {}^s476 + {}^s049 \sin 2\pi P + {}^s119 \cos 2\pi P$
 range: $2 \times {}^s129$
 max. at { phase ${}^s563 \pm {}^s014$ (m.e.)
 { J.D. $2422124.00 \pm {}^s036$ (m.e.)
 E = 2169

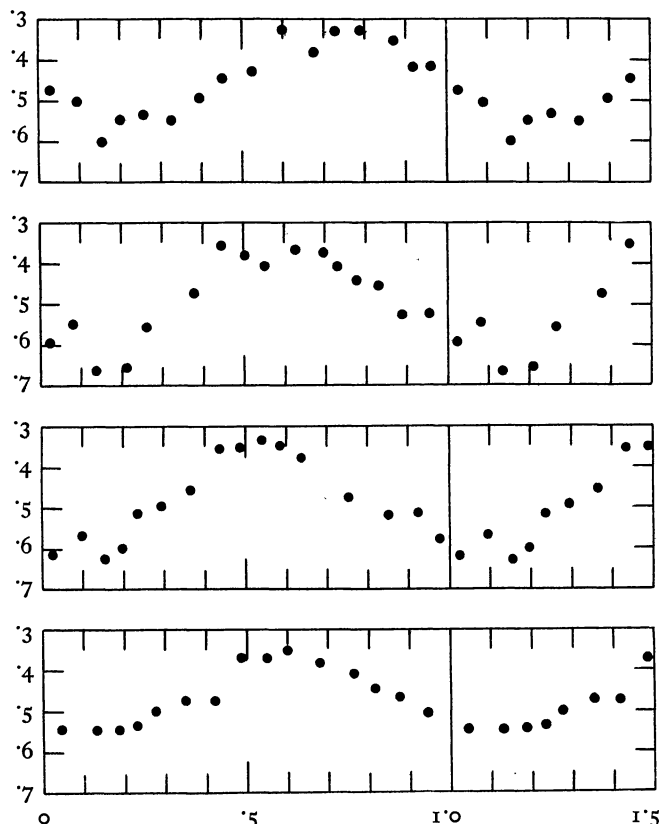


FIGURE 1.
 mean J.D. of the diagrams:
 2416501 } Harvard plates
 19625 }
 22124 }
 26367 } Johannesburg plates

TABLE 2. (Johannesburg plates)

J.D. from 2425709 to 27811 mean 26367				
n		O	C	O—C
23	P	^s 0437	^s 545	^s 547 — '002
23		'1299	'547	'556 — 9
23		'1857	'546	'547 — 1
23		'2306	'536	'532 + 4
23		'2776	'500	'511 — 11
23		'3513	'473	'469 + 4
23		'4166	'473	'431 + 42
23		'4859	'370	'396 — 26
23		'5513	'371	'374 — 3
23		'6007	'351	'368 — 17
23		'6760	'381	'375 + 6
23		'7653	'408	'407 + 1
23		'8145	'446	'433 + 13
23		'8751	'465	'468 — 3
23		'9435	'509	'507 + 2

$$C = {}^s462 + {}^s062 \sin 2\pi P + {}^s071 \cos 2\pi P$$

range: $2 \times {}^s094$

max. at { phase ${}^s614 \pm {}^s009$ (m.e.)
 { J.D. $2426366.10 \pm {}^s024$ (m.e.)
 E = 3805

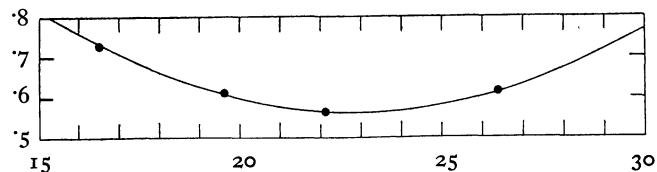


FIGURE 2.
 abscissa: '001 (J.D. — 2400000)
 ordinate: phase of maximum