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## Measures of Saturn's satellites in 1927

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B.	C. P. D.	1900				$\theta$	$\rho$	mag.	spec.	Remarks
		$\alpha$	$\delta$							
917	34°70'15	17 <sup>h</sup> 37 <sup>m</sup> 45 <sup>s</sup>	— 34° 33'	72° 4'5"	10.5 , 12.3					
918	35°72'23	39 51	35 2	137 4.9	9.5 , 12.2					
919	37°74'56	40 1	37 4	189 0.3	10.5 , 11.1		Ao			
920	37°74'81	41 20	37 23	307 1.2	9.4 , 12.8		A2			
921	37°75'20	43 4	37 30	136 1.0	10.4 , 11.9		A2			
922	36°76'44	43 5	36 21	125 1.0	10.7 , 11.7		F2	AB		
				158 4.9	10.7 , 11.3		F2	AC		
923	37°76'56	49 37	37 2	62 0.5	10.7 , 11.3		A2			
924	37°76'61	49 55	37 40	222 0.6	11.5 , 11.9		A2			
925	39°78'26	53 4	39 3	269 4.9	7.7 , 10.7		Ko			
926	37°77'76	53 59	37 7	175 2.2	9.5 , 13.3					

### Measures of Saturn's Satellites in 1927, by *W. H. van den Bos*.

The following measures of Saturn's inner satellites are a continuation of those made by Professor G. STRUVE during his stay at the Union Observatory in 1926. The programme has been restricted to measures of Mimas referred to the most convenient of the other inner satellites, of Enceladus referred to Tethys and of Tethys referred to Rhea. A series of photographic plates obtained with the 26-inch refractor of the Yale Observatory branch station at Johannesburg takes care of the other satellites, and the micrometer measures of Tethys—Rhea have been made as a connecting link between the visual and the photographic work. A periodic error of the driving clock of the 26½-inch, with a period of 80 seconds and a semi-amplitude of 1"·2 on a star in the equator, prevents good measures of widely separated objects and is the main reason for this restriction of the programme.

The measures have been made according to STRUVE's methods; the micrometer has not been removed from the telescope throughout the series and the apparent parallel has shown no change. With a few exceptions the measures were made in a red field.

The adopted value of one revolution of the micrometer screw is 9"·090.

The complete measure consists of a group of angles (4 or 6, seldom more), double distances (8 or more settings) and a second group of angles. The eyes are either parallel or perpendicular to the line joining the satellites.

The driving clock has given considerable trouble and has been repaired twice during the series, causing interruption in May and August.

The reductions have not been checked, as the observing records have been sent to Professor STRUVE and will be reduced independently under his supervision.

The first column gives the date and universal time; the second the hour angle (negative with telescope West, positive with telescope East of pier, unless an asterisk is affixed); the third and fourth angle and distance (apparent parallel, no refraction applied); the fifth the number of settings in angle and distance; the sixth the definition (5 perfect, 1 = very bad); a number in the last column refers to a note.

#### Mimas — Enceladus.

		<sup>h</sup>	<sup>m</sup>	<sup>o</sup>	"	"	"	"	"	"
April	23°02964	*+ 0	15	93°03	....	6..	4	1		
	23°03721	*+ 0	26	....	17.85	..8	4	1		
July	13°80688	+ 0	38	277°88	7.35	12,12	2			
	19°78462	+ 0	30	86°83	8.50	12,16	3			
	31°78204	+ 1	15	29°02	4.83	12,8	4 +	2		

Notes: 1 telescope up against pier before second  $\theta$  group.  
2 hazy.

#### Mimas — Tethys.

		<sup>h</sup>	<sup>m</sup>	<sup>o</sup>	"	"	"	"	"	"
March	7°01919	— 3	10	303°84	17°62	12,8	3 +			
	8°03159	— 2	48	241°81	42°75	12,8	2	1		
April	7°96654	— 2	18	285°26	22°25	12,12	2 +	2		
	8°02456	— 0	55	290°83	24°20	12,8	3			
	22°98611	— 0	48	280°12	21°08	8,9	4 +			
June	20°77348	— 1	46	341°50	28°20	12,12	2	3		
July	2°72947	— 2	00	140°78	34°06	12,12	4	4		
	2°95196	+ 3	22	242°60	31°97	8,10	4			
	3°93546	+ 3	02	324°05	31°40	12,9	4 +			
	3°99762	+ 4	32	354°65	28°14	12,8	3			
	14°70824	— 1	40	262°07	16°20	16,16	3			
	18°72795	— 0	56	271°17	35°62	16,16	var	5		
	23°71263	— 0	58	243°93	28°54	12,16	var	6		
	29°81317	+ 1	52	256°34	16°16	12,18	2			
Sept.	3°70976	+ 1	42	250°48	21°54	8,14	5	7		

Notes: 1 unreliable.  
2 wholly unreliable.  
3 bright wires, Mimas too faint, unreliable.  
4 haze, Mimas faint.