

TAHUN = 2019  
 LONG= 120.0 ~

\*\*\*\* ARGUMEN MASA DALAM WAKTU PIAWAI MALAYSIA \*\*\*\*

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
1.0	1	.0	5	59	44.2	18	6	58.6
1.0	1	1.0	6	1	26.0	18	5	17.0
1.0	1	2.0	6	3	7.7	18	3	35.4
1.0	1	3.0	6	4	49.6	18	1	53.8
1.0	1	4.0	6	6	31.6	18	0	12.0
1.0	1	5.0	6	8	13.7	17	58	30.1
1.0	1	6.0	6	9	56.2	17	56	47.9
1.0	1	7.0	6	11	38.9	17	55	5.3
2.0	1	.0	6	0	12.6	18	7	26.7
2.0	1	1.0	6	1	54.0	18	5	45.6
2.0	1	2.0	6	3	35.3	18	4	4.5
2.0	1	3.0	6	5	16.7	18	2	23.3
2.0	1	4.0	6	6	58.3	18	0	42.0
2.0	1	5.0	6	8	40.0	17	59	.5
2.0	1	6.0	6	10	22.0	17	57	18.7
2.0	1	7.0	6	12	4.3	17	55	36.6
3.0	1	.0	6	0	40.7	18	7	54.5
3.0	1	1.0	6	2	21.6	18	6	13.9
3.0	1	2.0	6	4	2.5	18	4	33.2
3.0	1	3.0	6	5	43.4	18	2	52.5
3.0	1	4.0	6	7	24.5	18	1	11.7
3.0	1	5.0	6	9	5.8	17	59	30.7
3.0	1	6.0	6	10	47.3	17	57	49.4
3.0	1	7.0	6	12	29.1	17	56	7.8
4.0	1	.0	6	1	8.4	18	8	22.0
4.0	1	1.0	6	2	48.8	18	6	41.8
4.0	1	2.0	6	4	29.2	18	5	1.7
4.0	1	3.0	6	6	9.7	18	3	21.5
4.0	1	4.0	6	7	50.2	18	1	41.2
4.0	1	5.0	6	9	31.0	18	0	.8
4.0	1	6.0	6	11	12.0	17	58	20.0
4.0	1	7.0	6	12	53.3	17	56	38.9
5.0	1	.0	6	1	35.8	18	8	49.0
5.0	1	1.0	6	3	15.7	18	7	9.4
5.0	1	2.0	6	4	55.5	18	5	29.8
5.0	1	3.0	6	6	35.4	18	3	50.2
5.0	1	4.0	6	8	15.4	18	2	10.5
5.0	1	5.0	6	9	55.7	18	0	30.6
5.0	1	6.0	6	11	36.1	17	58	50.4
5.0	1	7.0	6	13	16.9	17	57	9.9

6.0	1	.0	6 2	2.8	18 9	15.6
6.0	1	1.0	6 3	42.1	18 7	36.6
6.0	1	2.0	6 5	21.3	18 5	57.6
6.0	1	3.0	6 7	.7	18 4	18.6
6.0	1	4.0	6 8	40.1	18 2	39.4
6.0	1	5.0	6 10	19.7	18 1	.1
6.0	1	6.0	6 11	59.6	17 59	20.5
6.0	1	7.0	6 13	39.8	17 57	40.6
7.0	1	.0	6 2	29.3	18 9	41.7
7.0	1	1.0	6 4	8.0	18 8	3.3
7.0	1	2.0	6 5	46.6	18 6	25.0
7.0	1	3.0	6 7	25.3	18 4	46.6
7.0	1	4.0	6 9	4.2	18 3	8.1
7.0	1	5.0	6 10	43.2	18 1	29.4
7.0	1	6.0	6 12	22.4	17 59	50.4
7.0	1	7.0	6 14	2.0	17 58	11.2
8.0	1	.0	6 2	55.3	18 10	7.3
8.0	1	1.0	6 4	33.3	18 8	29.6
8.0	1	2.0	6 6	11.3	18 6	51.9
8.0	1	3.0	6 7	49.4	18 5	14.2
8.0	1	4.0	6 9	27.6	18 3	36.3
8.0	1	5.0	6 11	6.0	18 1	58.3
8.0	1	6.0	6 12	44.6	18 0	20.0
8.0	1	7.0	6 14	23.5	17 58	41.4
9.0	1	.0	6 3	20.8	18 10	32.4
9.0	1	1.0	6 4	58.2	18 8	55.4
9.0	1	2.0	6 6	35.5	18 7	18.4
9.0	1	3.0	6 8	12.9	18 5	41.4
9.0	1	4.0	6 9	50.4	18 4	4.2
9.0	1	5.0	6 11	28.1	18 2	26.9
9.0	1	6.0	6 13	6.0	18 0	49.3
9.0	1	7.0	6 14	44.2	17 59	11.4
10.0	1	.0	6 3	45.8	18 10	56.9
10.0	1	1.0	6 5	22.4	18 9	20.6
10.0	1	2.0	6 6	59.1	18 7	44.4
10.0	1	3.0	6 8	35.7	18 6	8.1
10.0	1	4.0	6 10	12.5	18 4	31.7
10.0	1	5.0	6 11	49.5	18 2	55.1
10.0	1	6.0	6 13	26.7	18 1	18.2
10.0	1	7.0	6 15	4.2	17 59	41.1
11.0	1	.0	6 4	10.2	18 11	20.8
11.0	1	1.0	6 5	46.1	18 9	45.3
11.0	1	2.0	6 7	22.0	18 8	9.9
11.0	1	3.0	6 8	57.9	18 6	34.3
11.0	1	4.0	6 10	33.9	18 4	58.7
11.0	1	5.0	6 12	10.1	18 3	22.8
11.0	1	6.0	6 13	46.6	18 1	46.8
11.0	1	7.0	6 15	23.4	18 0	10.4

12.0	1	.0	6	4	34.0	18	11	44.2
12.0	1	1.0	6	6	9.1	18	10	9.5
12.0	1	2.0	6	7	44.2	18	8	34.8
12.0	1	3.0	6	9	19.4	18	7	.0
12.0	1	4.0	6	10	54.6	18	5	25.2
12.0	1	5.0	6	12	30.1	18	3	50.2
12.0	1	6.0	6	14	5.7	18	2	14.9
12.0	1	7.0	6	15	41.7	18	0	39.3

13.0	1	.0	6	4	57.2	18	12	6.9
13.0	1	1.0	6	6	31.5	18	10	33.0
13.0	1	2.0	6	8	5.8	18	8	59.1
13.0	1	3.0	6	9	40.1	18	7	25.2
13.0	1	4.0	6	11	14.6	18	5	51.2
13.0	1	5.0	6	12	49.2	18	4	17.0
13.0	1	6.0	6	14	24.0	18	2	42.6
13.0	1	7.0	6	15	59.2	18	1	7.9

14.0	1	.0	6	5	19.8	18	12	28.9
14.0	1	1.0	6	6	53.2	18	10	55.9
14.0	1	2.0	6	8	26.7	18	9	22.9
14.0	1	3.0	6	10	.2	18	7	49.9
14.0	1	4.0	6	11	33.8	18	6	16.7
14.0	1	5.0	6	13	7.5	18	4	43.4
14.0	1	6.0	6	14	41.5	18	3	9.8
14.0	1	7.0	6	16	15.8	18	1	36.0

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
			MATAHARI			MATAHARI		
H	B	~	j	m	s	j	m	s
15.0	1	.0	6	5	41.7	18	12	50.3
15.0	1	1.0	6	7	14.3	18	11	18.2
15.0	1	2.0	6	8	46.8	18	9	46.1
15.0	1	3.0	6	10	19.5	18	8	13.9
15.0	1	4.0	6	11	52.2	18	6	41.6
15.0	1	5.0	6	13	25.1	18	5	9.2
15.0	1	6.0	6	14	58.2	18	3	36.5
15.0	1	7.0	6	16	31.6	18	2	3.6
16.0	1	.0	6	6	2.9	18	13	11.0
16.0	1	1.0	6	7	34.6	18	11	39.8
16.0	1	2.0	6	9	6.3	18	10	8.6
16.0	1	3.0	6	10	38.0	18	8	37.3
16.0	1	4.0	6	12	9.8	18	7	6.0
16.0	1	5.0	6	13	41.7	18	5	34.5
16.0	1	6.0	6	15	14.0	18	4	2.7
16.0	1	7.0	6	16	46.4	18	2	30.7
17.0	1	.0	6	6	23.4	18	13	31.0
17.0	1	1.0	6	7	54.2	18	12	.7
17.0	1	2.0	6	9	24.9	18	10	30.4
17.0	1	3.0	6	10	55.7	18	9	.1

17.0	1	4.0	6 12 26.6	18 7 29.8
17.0	1	5.0	6 13 57.6	18 5 59.2
17.0	1	6.0	6 15 28.9	18 4 28.4
17.0	1	7.0	6 17 .4	18 2 57.4
18.0	1	.0	6 6 43.3	18 13 50.2
18.0	1	1.0	6 8 13.0	18 12 20.9
18.0	1	2.0	6 9 42.8	18 10 51.6
18.0	1	3.0	6 11 12.6	18 9 22.3
18.0	1	4.0	6 12 42.5	18 7 52.9
18.0	1	5.0	6 14 12.6	18 6 23.3
18.0	1	6.0	6 15 42.9	18 4 53.5
18.0	1	7.0	6 17 13.4	18 3 23.5
19.0	1	.0	6 7 2.3	18 14 8.7
19.0	1	1.0	6 8 31.1	18 12 40.4
19.0	1	2.0	6 9 59.9	18 11 12.1
19.0	1	3.0	6 11 28.7	18 9 43.8
19.0	1	4.0	6 12 57.6	18 8 15.4
19.0	1	5.0	6 14 26.7	18 6 46.9
19.0	1	6.0	6 15 56.0	18 5 18.1
19.0	1	7.0	6 17 25.6	18 3 49.0
20.0	1	.0	6 7 20.7	18 14 26.5
20.0	1	1.0	6 8 48.5	18 12 59.2
20.0	1	2.0	6 10 16.2	18 11 32.0
20.0	1	3.0	6 11 44.0	18 10 4.7
20.0	1	4.0	6 13 11.9	18 8 37.3
20.0	1	5.0	6 14 39.9	18 7 9.8
20.0	1	6.0	6 16 8.2	18 5 42.1
20.0	1	7.0	6 17 36.7	18 4 14.1
21.0	1	.0	6 7 38.3	18 14 43.5
21.0	1	1.0	6 9 5.0	18 13 17.3
21.0	1	2.0	6 10 31.7	18 11 51.1
21.0	1	3.0	6 11 58.5	18 10 24.9
21.0	1	4.0	6 13 25.3	18 8 58.6
21.0	1	5.0	6 14 52.3	18 7 32.1
21.0	1	6.0	6 16 19.5	18 6 5.4
21.0	1	7.0	6 17 47.0	18 4 38.5
22.0	1	.0	6 7 55.1	18 14 59.7
22.0	1	1.0	6 9 20.8	18 13 34.6
22.0	1	2.0	6 10 46.4	18 12 9.5
22.0	1	3.0	6 12 12.1	18 10 44.4
22.0	1	4.0	6 13 37.9	18 9 19.2
22.0	1	5.0	6 15 3.8	18 7 53.8
22.0	1	6.0	6 16 29.9	18 6 28.2
22.0	1	7.0	6 17 56.3	18 5 2.4
23.0	1	.0	6 8 11.2	18 15 15.2
23.0	1	1.0	6 9 35.8	18 13 51.2
23.0	1	2.0	6 11 .3	18 12 27.2
23.0	1	3.0	6 12 24.9	18 11 3.2

23.0	1	4.0	6 13 49.6	18 9 39.1
23.0	1	5.0	6 15 14.4	18 8 14.8
23.0	1	6.0	6 16 39.4	18 6 50.4
23.0	1	7.0	6 18 4.7	18 5 25.7
24.0	1	.0	6 8 26.6	18 15 29.9
24.0	1	1.0	6 9 50.0	18 14 7.0
24.0	1	2.0	6 11 13.4	18 12 44.2
24.0	1	3.0	6 12 36.9	18 11 21.3
24.0	1	4.0	6 14 .4	18 9 58.3
24.0	1	5.0	6 15 24.1	18 8 35.2
24.0	1	6.0	6 16 48.0	18 7 11.9
24.0	1	7.0	6 18 12.1	18 5 48.4
25.0	1	.0	6 8 41.1	18 15 43.9
25.0	1	1.0	6 10 3.4	18 14 22.1
25.0	1	2.0	6 11 25.7	18 13 .5
25.0	1	3.0	6 12 48.0	18 11 38.7
25.0	1	4.0	6 14 10.4	18 10 16.9
25.0	1	5.0	6 15 32.9	18 8 55.0
25.0	1	6.0	6 16 55.7	18 7 32.8
25.0	1	7.0	6 18 18.6	18 6 10.4
26.0	1	.0	6 8 54.9	18 15 57.0
26.0	1	1.0	6 10 16.1	18 14 36.5
26.0	1	2.0	6 11 37.2	18 13 16.0
26.0	1	3.0	6 12 58.3	18 11 55.4
26.0	1	4.0	6 14 19.5	18 10 34.8
26.0	1	5.0	6 15 40.9	18 9 14.1
26.0	1	6.0	6 17 2.4	18 7 53.1
26.0	1	7.0	6 18 24.2	18 6 31.9
27.0	1	.0	6 9 8.0	18 16 9.4
27.0	1	1.0	6 10 27.9	18 14 50.1
27.0	1	2.0	6 11 47.8	18 13 30.8
27.0	1	3.0	6 13 7.7	18 12 11.4
27.0	1	4.0	6 14 27.8	18 10 52.0
27.0	1	5.0	6 15 47.9	18 9 32.5
27.0	1	6.0	6 17 8.3	18 8 12.7
27.0	1	7.0	6 18 28.8	18 6 52.8
28.0	1	.0	6 9 20.2	18 16 21.0
28.0	1	1.0	6 10 38.9	18 15 2.9
28.0	1	2.0	6 11 57.6	18 13 44.8
28.0	1	3.0	6 13 16.3	18 12 26.7
28.0	1	4.0	6 14 35.1	18 11 8.5
28.0	1	5.0	6 15 54.1	18 9 50.2
28.0	1	6.0	6 17 13.2	18 8 31.7
28.0	1	7.0	6 18 32.5	18 7 13.0
29.0	1	.0	6 9 31.6	18 16 31.8
29.0	1	1.0	6 10 49.1	18 15 15.0
29.0	1	2.0	6 12 6.6	18 13 58.1
29.0	1	3.0	6 13 24.1	18 12 41.3

29.0	1	4.0	6 14 41.6	18 11 24.3
29.0	1	5.0	6 15 59.3	18 10 7.3
29.0	1	6.0	6 17 17.2	18 8 50.0
29.0	1	7.0	6 18 35.3	18 7 32.6
30.0	1	.0	6 9 42.3	18 16 41.8
30.0	1	1.0	6 10 58.5	18 15 26.2
30.0	1	2.0	6 12 14.7	18 14 10.7
30.0	1	3.0	6 13 30.9	18 12 55.1
30.0	1	4.0	6 14 47.2	18 11 39.4
30.0	1	5.0	6 16 3.7	18 10 23.6
30.0	1	6.0	6 17 20.3	18 9 7.7
30.0	1	7.0	6 18 37.1	18 7 51.5
31.0	1	.0	6 9 52.1	18 16 51.0
31.0	1	1.0	6 11 7.1	18 15 36.7
31.0	1	2.0	6 12 22.0	18 14 22.5
31.0	1	3.0	6 13 36.9	18 13 8.2
31.0	1	4.0	6 14 52.0	18 11 53.8
31.0	1	5.0	6 16 7.1	18 10 39.3
31.0	1	6.0	6 17 22.4	18 9 24.7
31.0	1	7.0	6 18 38.0	18 8 9.8

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
1.0	2	.0	6	10	1.2	18	16	59.5
1.0	2	1.0	6	11	14.8	18	15	46.5
1.0	2	2.0	6	12	28.5	18	14	33.5
1.0	2	3.0	6	13	42.1	18	13	20.5
1.0	2	4.0	6	14	55.8	18	12	7.4
1.0	2	5.0	6	16	9.7	18	10	54.3
1.0	2	6.0	6	17	23.7	18	9	40.9
1.0	2	7.0	6	18	37.9	18	8	27.4
2.0	2	.0	6	10	9.4	18	17	7.1
2.0	2	1.0	6	11	21.8	18	15	55.4
2.0	2	2.0	6	12	34.1	18	14	43.8
2.0	2	3.0	6	13	46.4	18	13	32.1
2.0	2	4.0	6	14	58.8	18	12	20.4
2.0	2	5.0	6	16	11.3	18	11	8.5
2.0	2	6.0	6	17	24.0	18	9	56.5
2.0	2	7.0	6	18	36.9	18	8	44.3
3.0	2	.0	6	10	16.9	18	17	13.9
3.0	2	1.0	6	11	27.9	18	16	3.5
3.0	2	2.0	6	12	38.8	18	14	53.2
3.0	2	3.0	6	13	49.8	18	13	42.9
3.0	2	4.0	6	15	.9	18	12	32.5
3.0	2	5.0	6	16	12.1	18	11	22.1
3.0	2	6.0	6	17	23.4	18	10	11.4
3.0	2	7.0	6	18	34.9	18	9	.6

4.0	2	.0	6 10 23.5	18 17 19.9
4.0	2	1.0	6 11 33.1	18 16 10.9
4.0	2	2.0	6 12 42.8	18 15 2.0
4.0	2	3.0	6 13 52.4	18 13 53.0
4.0	2	4.0	6 15 2.1	18 12 44.0
4.0	2	5.0	6 16 11.9	18 11 34.9
4.0	2	6.0	6 17 21.9	18 10 25.6
4.0	2	7.0	6 18 32.0	18 9 16.1
5.0	2	.0	6 10 29.3	18 17 25.0
5.0	2	1.0	6 11 37.6	18 16 17.5
5.0	2	2.0	6 12 45.8	18 15 9.9
5.0	2	3.0	6 13 54.1	18 14 2.3
5.0	2	4.0	6 15 2.4	18 12 54.7
5.0	2	5.0	6 16 10.9	18 11 47.0
5.0	2	6.0	6 17 19.4	18 10 39.1
5.0	2	7.0	6 18 28.2	18 9 31.0
6.0	2	.0	6 10 34.3	18 17 29.4
6.0	2	1.0	6 11 41.2	18 16 23.2
6.0	2	2.0	6 12 48.1	18 15 17.1
6.0	2	3.0	6 13 54.9	18 14 10.9
6.0	2	4.0	6 15 1.9	18 13 4.7
6.0	2	5.0	6 16 8.9	18 11 58.3
6.0	2	6.0	6 17 16.1	18 10 51.8
6.0	2	7.0	6 18 23.5	18 9 45.2
7.0	2	.0	6 10 38.5	18 17 33.0
7.0	2	1.0	6 11 44.0	18 16 28.2
7.0	2	2.0	6 12 49.4	18 15 23.5
7.0	2	3.0	6 13 54.9	18 14 18.7
7.0	2	4.0	6 15 .5	18 13 13.9
7.0	2	5.0	6 16 6.1	18 12 9.0
7.0	2	6.0	6 17 11.8	18 11 3.9
7.0	2	7.0	6 18 17.8	18 9 58.7
8.0	2	.0	6 10 41.9	18 17 35.8
8.0	2	1.0	6 11 46.0	18 16 32.4
8.0	2	2.0	6 12 50.0	18 15 29.1
8.0	2	3.0	6 13 54.0	18 14 25.7
8.0	2	4.0	6 14 58.2	18 13 22.3
8.0	2	5.0	6 16 2.4	18 12 18.9
8.0	2	6.0	6 17 6.7	18 11 15.2
8.0	2	7.0	6 18 11.2	18 10 11.5
9.0	2	.0	6 10 44.5	18 17 37.7
9.0	2	1.0	6 11 47.1	18 16 35.8
9.0	2	2.0	6 12 49.7	18 15 33.9
9.0	2	3.0	6 13 52.3	18 14 32.0
9.0	2	4.0	6 14 55.0	18 13 30.1
9.0	2	5.0	6 15 57.8	18 12 28.0
9.0	2	6.0	6 17 .7	18 11 25.9
9.0	2	7.0	6 18 3.7	18 10 23.5

10.0	2	.0	6 10 46.2	18 17 38.9
10.0	2	1.0	6 11 47.4	18 16 38.4
10.0	2	2.0	6 12 48.6	18 15 38.0
10.0	2	3.0	6 13 49.8	18 14 37.6
10.0	2	4.0	6 14 51.0	18 13 37.1
10.0	2	5.0	6 15 52.3	18 12 36.5
10.0	2	6.0	6 16 53.7	18 11 35.8
10.0	2	7.0	6 17 55.3	18 10 34.9

11.0	2	.0	6 10 47.2	18 17 39.3
11.0	2	1.0	6 11 46.9	18 16 40.3
11.0	2	2.0	6 12 46.6	18 15 41.3
11.0	2	3.0	6 13 46.4	18 14 42.3
11.0	2	4.0	6 14 46.1	18 13 43.3
11.0	2	5.0	6 15 46.0	18 12 44.2
11.0	2	6.0	6 16 45.9	18 11 45.0
11.0	2	7.0	6 17 46.0	18 10 45.6

12.0	2	.0	6 10 47.4	18 17 38.9
12.0	2	1.0	6 11 45.7	18 16 41.4
12.0	2	2.0	6 12 43.9	18 15 43.9
12.0	2	3.0	6 13 42.1	18 14 46.4
12.0	2	4.0	6 14 40.4	18 13 48.9
12.0	2	5.0	6 15 38.8	18 12 51.2
12.0	2	6.0	6 16 37.2	18 11 53.5
12.0	2	7.0	6 17 35.9	18 10 55.6

13.0	2	.0	6 10 46.8	18 17 37.7
13.0	2	1.0	6 11 43.6	18 16 41.7
13.0	2	2.0	6 12 40.3	18 15 45.7
13.0	2	3.0	6 13 37.1	18 14 49.7
13.0	2	4.0	6 14 33.9	18 13 53.7
13.0	2	5.0	6 15 30.7	18 12 57.5
13.0	2	6.0	6 16 27.7	18 12 1.3
13.0	2	7.0	6 17 24.8	18 11 4.9

14.0	2	.0	6 10 45.4	18 17 35.8
14.0	2	1.0	6 11 40.7	18 16 41.3
14.0	2	2.0	6 12 36.0	18 15 46.8
14.0	2	3.0	6 13 31.2	18 14 52.3
14.0	2	4.0	6 14 26.5	18 13 57.7
14.0	2	5.0	6 15 21.9	18 13 3.1
14.0	2	6.0	6 16 17.3	18 12 8.4
14.0	2	7.0	6 17 12.9	18 11 13.6

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
15.0	2	.0	6 10 43.3			18 17 33.1		
15.0	2	1.0	6 11 37.1			18 16 40.1		
15.0	2	2.0	6 12 30.8			18 15 47.1		
15.0	2	3.0	6 13 24.6			18 14 54.1		
15.0	2	4.0	6 14 18.3			18 14 1.1		



15.0	2	5.0	6 15	12.2	18 13	8.0
15.0	2	6.0	6 16	6.1	18 12	14.8
15.0	2	7.0	6 17	.2	18 11	21.5
16.0	2	.0	6 10	40.4	18 17	29.7
16.0	2	1.0	6 11	32.7	18 16	38.2
16.0	2	2.0	6 12	24.9	18 15	46.7
16.0	2	3.0	6 13	17.1	18 14	55.3
16.0	2	4.0	6 14	9.4	18 14	3.8
16.0	2	5.0	6 15	1.7	18 13	12.2
16.0	2	6.0	6 15	54.1	18 12	20.6
16.0	2	7.0	6 16	46.7	18 11	28.8
17.0	2	.0	6 10	36.8	18 17	25.5
17.0	2	1.0	6 11	27.5	18 16	35.6
17.0	2	2.0	6 12	18.2	18 15	45.7
17.0	2	3.0	6 13	8.9	18 14	55.7
17.0	2	4.0	6 13	59.6	18 14	5.8
17.0	2	5.0	6 14	50.4	18 13	15.8
17.0	2	6.0	6 15	41.3	18 12	25.7
17.0	2	7.0	6 16	32.3	18 11	35.5
18.0	2	.0	6 10	32.5	18 17	20.7
18.0	2	1.0	6 11	21.7	18 16	32.3
18.0	2	2.0	6 12	10.8	18 15	43.9
18.0	2	3.0	6 12	60.0	18 14	55.5
18.0	2	4.0	6 13	49.2	18 14	7.1
18.0	2	5.0	6 14	38.4	18 13	18.7
18.0	2	6.0	6 15	27.7	18 12	30.1
18.0	2	7.0	6 16	17.2	18 11	41.5
19.0	2	.0	6 10	27.5	18 17	15.2
19.0	2	1.0	6 11	15.1	18 16	28.3
19.0	2	2.0	6 12	2.7	18 15	41.5
19.0	2	3.0	6 12	50.3	18 14	54.6
19.0	2	4.0	6 13	37.9	18 14	7.8
19.0	2	5.0	6 14	25.6	18 13	20.9
19.0	2	6.0	6 15	13.4	18 12	33.9
19.0	2	7.0	6 16	1.2	18 11	46.8
20.0	2	.0	6 10	21.8	18 17	9.0
20.0	2	1.0	6 11	7.8	18 16	23.7
20.0	2	2.0	6 11	53.9	18 15	38.4
20.0	2	3.0	6 12	39.9	18 14	53.1
20.0	2	4.0	6 13	26.0	18 14	7.9
20.0	2	5.0	6 14	12.1	18 13	22.5
20.0	2	6.0	6 14	58.3	18 12	37.1
20.0	2	7.0	6 15	44.6	18 11	51.6
21.0	2	.0	6 10	15.4	18 17	2.1
21.0	2	1.0	6 10	59.9	18 16	18.4
21.0	2	2.0	6 11	44.4	18 15	34.7
21.0	2	3.0	6 12	28.9	18 14	51.0
21.0	2	4.0	6 13	13.3	18 14	7.3

21.0	2	5.0	6 13	57.9	18 13	23.5
21.0	2	6.0	6 14	42.5	18 12	39.7
21.0	2	7.0	6 15	27.2	18 11	55.8
22.0	2	.0	6 10	8.4	18 16	54.6
22.0	2	1.0	6 10	51.3	18 16	12.5
22.0	2	2.0	6 11	34.2	18 15	30.3
22.0	2	3.0	6 12	17.1	18 14	48.2
22.0	2	4.0	6 13	.0	18 14	6.1
22.0	2	5.0	6 13	43.0	18 13	24.0
22.0	2	6.0	6 14	26.0	18 12	41.7
22.0	2	7.0	6 15	9.1	18 11	59.4
23.0	2	.0	6 10	.7	18 16	46.5
23.0	2	1.0	6 10	42.1	18 16	6.0
23.0	2	2.0	6 11	23.4	18 15	25.4
23.0	2	3.0	6 12	4.7	18 14	44.9
23.0	2	4.0	6 12	46.1	18 14	4.4
23.0	2	5.0	6 13	27.4	18 13	23.8
23.0	2	6.0	6 14	8.9	18 12	43.2
23.0	2	7.0	6 14	50.4	18 12	2.5
24.0	2	.0	6 9	52.5	18 16	37.9
24.0	2	1.0	6 10	32.3	18 15	58.9
24.0	2	2.0	6 11	12.0	18 15	19.9
24.0	2	3.0	6 11	51.7	18 14	41.0
24.0	2	4.0	6 12	31.5	18 14	2.1
24.0	2	5.0	6 13	11.2	18 13	23.1
24.0	2	6.0	6 13	51.1	18 12	44.1
24.0	2	7.0	6 14	31.0	18 12	5.0
25.0	2	.0	6 9	43.7	18 16	28.6
25.0	2	1.0	6 10	21.9	18 15	51.2
25.0	2	2.0	6 10	60.0	18 15	13.9
25.0	2	3.0	6 11	38.1	18 14	36.6
25.0	2	4.0	6 12	16.3	18 13	59.2
25.0	2	5.0	6 12	54.4	18 13	21.9
25.0	2	6.0	6 13	32.6	18 12	44.5
25.0	2	7.0	6 14	10.9	18 12	7.0
26.0	2	.0	6 9	34.3	18 16	18.8
26.0	2	1.0	6 10	10.9	18 15	43.0
26.0	2	2.0	6 10	47.4	18 15	7.3
26.0	2	3.0	6 11	23.9	18 14	31.6
26.0	2	4.0	6 12	.4	18 13	55.9
26.0	2	5.0	6 12	37.0	18 13	20.1
26.0	2	6.0	6 13	13.6	18 12	44.3
26.0	2	7.0	6 13	50.3	18 12	8.5
27.0	2	.0	6 9	24.3	18 16	8.5
27.0	2	1.0	6 9	59.3	18 15	34.3
27.0	2	2.0	6 10	34.2	18 15	.2
27.0	2	3.0	6 11	9.1	18 14	26.1
27.0	2	4.0	6 11	44.1	18 13	52.0

27.0	2	5.0	6 12 19.0	18 13 17.8
27.0	2	6.0	6 12 54.0	18 12 43.7
27.0	2	7.0	6 13 29.0	18 12 9.4
28.0	2	.0	6 9 13.8	18 15 57.6
28.0	2	1.0	6 9 47.2	18 15 25.1
28.0	2	2.0	6 10 20.5	18 14 52.5
28.0	2	3.0	6 10 53.8	18 14 20.1
28.0	2	4.0	6 11 27.1	18 13 47.6
28.0	2	5.0	6 12 .4	18 13 15.1
28.0	2	6.0	6 12 33.8	18 12 42.5
28.0	2	7.0	6 13 7.2	18 12 9.9

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
1.0	3	.0	6	9	2.8	18	15	46.2
1.0	3	1.0	6	9	34.6	18	15	15.3
1.0	3	2.0	6	10	6.3	18	14	44.4
1.0	3	3.0	6	10	38.0	18	14	13.6
1.0	3	4.0	6	11	9.6	18	13	42.7
1.0	3	5.0	6	11	41.3	18	13	11.8
1.0	3	6.0	6	12	13.0	18	12	40.9
1.0	3	7.0	6	12	44.8	18	12	10.0
2.0	3	.0	6	8	51.3	18	15	34.4
2.0	3	1.0	6	9	21.4	18	15	5.1
2.0	3	2.0	6	9	51.5	18	14	35.8
2.0	3	3.0	6	10	21.6	18	14	6.6
2.0	3	4.0	6	10	51.6	18	13	37.4
2.0	3	5.0	6	11	21.7	18	13	8.1
2.0	3	6.0	6	11	51.7	18	12	38.9
2.0	3	7.0	6	12	21.9	18	12	9.6
3.0	3	.0	6	8	39.3	18	15	22.1
3.0	3	1.0	6	9	7.8	18	14	54.4
3.0	3	2.0	6	9	36.3	18	14	26.8
3.0	3	3.0	6	10	4.7	18	13	59.2
3.0	3	4.0	6	10	33.1	18	13	31.6
3.0	3	5.0	6	11	1.5	18	13	4.0
3.0	3	6.0	6	11	29.9	18	12	36.4
3.0	3	7.0	6	11	58.4	18	12	8.7
4.0	3	.0	6	8	26.9	18	15	9.3
4.0	3	1.0	6	8	53.7	18	14	43.3
4.0	3	2.0	6	9	20.5	18	14	17.3
4.0	3	3.0	6	9	47.3	18	13	51.3
4.0	3	4.0	6	10	14.1	18	13	25.3
4.0	3	5.0	6	10	40.9	18	12	59.4
4.0	3	6.0	6	11	7.6	18	12	33.4
4.0	3	7.0	6	11	34.5	18	12	7.4
5.0	3	.0	6	8	13.9	18	14	56.1

5.0	3	1.0	6 8	39.2	18 14	31.7
5.0	3	2.0	6 9	4.3	18 14	7.3
5.0	3	3.0	6 9	29.5	18 13	43.0
5.0	3	4.0	6 9	54.6	18 13	18.7
5.0	3	5.0	6 10	19.7	18 12	54.4
5.0	3	6.0	6 10	44.9	18 12	30.1
5.0	3	7.0	6 11	10.0	18 12	5.7
6.0	3	.0	6 8	.6	18 14	42.4
6.0	3	1.0	6 8	24.1	18 14	19.7
6.0	3	2.0	6 8	47.7	18 13	57.0
6.0	3	3.0	6 9	11.2	18 13	34.3
6.0	3	4.0	6 9	34.7	18 13	11.6
6.0	3	5.0	6 9	58.1	18 12	49.0
6.0	3	6.0	6 10	21.6	18 12	26.3
6.0	3	7.0	6 10	45.1	18 12	3.6
7.0	3	.0	6 7	46.8	18 14	28.4
7.0	3	1.0	6 8	8.7	18 14	7.3
7.0	3	2.0	6 8	30.6	18 13	46.2
7.0	3	3.0	6 8	52.5	18 13	25.2
7.0	3	4.0	6 9	14.3	18 13	4.2
7.0	3	5.0	6 9	36.1	18 12	43.2
7.0	3	6.0	6 9	57.9	18 12	22.2
7.0	3	7.0	6 10	19.8	18 12	1.1
8.0	3	.0	6 7	32.6	18 14	13.9
8.0	3	1.0	6 7	52.9	18 13	54.5
8.0	3	2.0	6 8	13.1	18 13	35.1
8.0	3	3.0	6 8	33.3	18 13	15.7
8.0	3	4.0	6 8	53.5	18 12	56.3
8.0	3	5.0	6 9	13.7	18 12	37.0
8.0	3	6.0	6 9	33.8	18 12	17.6
8.0	3	7.0	6 9	54.0	18 11	58.3
9.0	3	.0	6 7	18.0	18 13	59.1
9.0	3	1.0	6 7	36.6	18 13	41.3
9.0	3	2.0	6 7	55.2	18 13	23.5
9.0	3	3.0	6 8	13.8	18 13	5.8
9.0	3	4.0	6 8	32.3	18 12	48.1
9.0	3	5.0	6 8	50.8	18 12	30.4
9.0	3	6.0	6 9	9.3	18 12	12.7
9.0	3	7.0	6 9	27.8	18 11	55.1
10.0	3	.0	6 7	3.0	18 13	44.0
10.0	3	1.0	6 7	20.0	18 13	27.8
10.0	3	2.0	6 7	36.9	18 13	11.7
10.0	3	3.0	6 7	53.8	18 12	55.6
10.0	3	4.0	6 8	10.7	18 12	39.5
10.0	3	5.0	6 8	27.6	18 12	23.5
10.0	3	6.0	6 8	44.4	18 12	7.5
10.0	3	7.0	6 9	1.2	18 11	51.5
11.0	3	.0	6 6	47.7	18 13	28.4

11.0	3	1.0	6	7	3.0	18	13	13.9
11.0	3	2.0	6	7	18.3	18	12	59.5
11.0	3	3.0	6	7	33.5	18	12	45.0
11.0	3	4.0	6	7	48.8	18	12	30.7
11.0	3	5.0	6	8	3.9	18	12	16.3
11.0	3	6.0	6	8	19.1	18	12	2.0
11.0	3	7.0	6	8	34.3	18	11	47.6

12.0	3	.0	6	6	32.0	18	13	12.6
12.0	3	1.0	6	6	45.7	18	12	59.7
12.0	3	2.0	6	6	59.3	18	12	46.9
12.0	3	3.0	6	7	12.9	18	12	34.2
12.0	3	4.0	6	7	26.5	18	12	21.4
12.0	3	5.0	6	7	40.0	18	12	8.8
12.0	3	6.0	6	7	53.5	18	11	56.1
12.0	3	7.0	6	8	7.0	18	11	43.4

13.0	3	.0	6	6	16.0	18	12	56.5
13.0	3	1.0	6	6	28.0	18	12	45.3
13.0	3	2.0	6	6	40.0	18	12	34.1
13.0	3	3.0	6	6	51.9	18	12	23.0
13.0	3	4.0	6	7	3.8	18	12	11.9
13.0	3	5.0	6	7	15.7	18	12	.9
13.0	3	6.0	6	7	27.5	18	11	49.9
13.0	3	7.0	6	7	39.3	18	11	38.9

14.0	3	.0	6	5	59.7	18	12	40.0
14.0	3	1.0	6	6	10.1	18	12	30.5
14.0	3	2.0	6	6	20.4	18	12	21.0
14.0	3	3.0	6	6	30.7	18	12	11.5
14.0	3	4.0	6	6	40.9	18	12	2.1
14.0	3	5.0	6	6	51.1	18	11	52.8
14.0	3	6.0	6	7	1.2	18	11	43.5
14.0	3	7.0	6	7	11.4	18	11	34.1

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
			MATAHARI			MATAHARI		
H	B	~	j	m	s	j	m	s

15.0	3	.0	6	5	43.1	18	12	23.3
15.0	3	1.0	6	5	51.8	18	12	15.4
15.0	3	2.0	6	6	.5	18	12	7.6
15.0	3	3.0	6	6	9.1	18	11	59.8
15.0	3	4.0	6	6	17.7	18	11	52.1
15.0	3	5.0	6	6	26.2	18	11	44.4
15.0	3	6.0	6	6	34.7	18	11	36.7
15.0	3	7.0	6	6	43.1	18	11	29.1

16.0	3	.0	6	5	26.2	18	12	6.4
16.0	3	1.0	6	5	33.3	18	12	.2
16.0	3	2.0	6	5	40.3	18	11	54.0
16.0	3	3.0	6	5	47.3	18	11	47.9
16.0	3	4.0	6	5	54.2	18	11	41.8
16.0	3	5.0	6	6	1.0	18	11	35.8

16.0	3	6.0	6	6	7.9	18	11	29.8
16.0	3	7.0	6	6	14.6	18	11	23.8
17.0	3	.0	6	5	9.1	18	11	49.2
17.0	3	1.0	6	5	14.5	18	11	44.6
17.0	3	2.0	6	5	19.9	18	11	40.1
17.0	3	3.0	6	5	25.2	18	11	35.7
17.0	3	4.0	6	5	30.4	18	11	31.3
17.0	3	5.0	6	5	35.6	18	11	26.9
17.0	3	6.0	6	5	40.8	18	11	22.6
17.0	3	7.0	6	5	45.9	18	11	18.3
18.0	3	.0	6	4	51.8	18	11	31.9
18.0	3	1.0	6	4	55.6	18	11	28.9
18.0	3	2.0	6	4	59.3	18	11	26.1
18.0	3	3.0	6	5	2.9	18	11	23.3
18.0	3	4.0	6	5	6.5	18	11	20.5
18.0	3	5.0	6	5	10.0	18	11	17.8
18.0	3	6.0	6	5	13.5	18	11	15.2
18.0	3	7.0	6	5	16.9	18	11	12.6
19.0	3	.0	6	4	34.3	18	11	14.3
19.0	3	1.0	6	4	36.4	18	11	13.0
19.0	3	2.0	6	4	38.4	18	11	11.8
19.0	3	3.0	6	4	40.4	18	11	10.7
19.0	3	4.0	6	4	42.3	18	11	9.6
19.0	3	5.0	6	4	44.2	18	11	8.6
19.0	3	6.0	6	4	46.0	18	11	7.6
19.0	3	7.0	6	4	47.7	18	11	6.7
20.0	3	.0	6	4	16.6	18	10	56.6
20.0	3	1.0	6	4	17.0	18	10	57.0
20.0	3	2.0	6	4	17.4	18	10	57.5
20.0	3	3.0	6	4	17.7	18	10	58.0
20.0	3	4.0	6	4	18.0	18	10	58.5
20.0	3	5.0	6	4	18.2	18	10	59.2
20.0	3	6.0	6	4	18.3	18	10	59.9
20.0	3	7.0	6	4	18.4	18	11	.6
21.0	3	.0	6	3	58.8	18	10	38.8
21.0	3	1.0	6	3	57.6	18	10	40.8
21.0	3	2.0	6	3	56.3	18	10	42.9
21.0	3	3.0	6	3	54.9	18	10	45.1
21.0	3	4.0	6	3	53.5	18	10	47.3
21.0	3	5.0	6	3	52.1	18	10	49.6
21.0	3	6.0	6	3	50.5	18	10	52.0
21.0	3	7.0	6	3	48.9	18	10	54.4
22.0	3	.0	6	3	40.8	18	10	20.8
22.0	3	1.0	6	3	37.9	18	10	24.5
22.0	3	2.0	6	3	35.0	18	10	28.3
22.0	3	3.0	6	3	32.0	18	10	32.1
22.0	3	4.0	6	3	28.9	18	10	36.0
22.0	3	5.0	6	3	25.8	18	10	40.0

22.0	3	6.0	6	3	22.6	18	10	44.0
22.0	3	7.0	6	3	19.3	18	10	48.1
23.0	3	.0	6	3	22.8	18	10	2.8
23.0	3	1.0	6	3	18.2	18	10	8.2
23.0	3	2.0	6	3	13.6	18	10	13.6
23.0	3	3.0	6	3	9.0	18	10	19.1
23.0	3	4.0	6	3	4.3	18	10	24.6
23.0	3	5.0	6	2	59.5	18	10	30.3
23.0	3	6.0	6	2	54.6	18	10	36.0
23.0	3	7.0	6	2	49.6	18	10	41.8
24.0	3	.0	6	3	4.6	18	9	44.8
24.0	3	1.0	6	2	58.5	18	9	51.8
24.0	3	2.0	6	2	52.2	18	9	58.8
24.0	3	3.0	6	2	45.9	18	10	6.0
24.0	3	4.0	6	2	39.5	18	10	13.2
24.0	3	5.0	6	2	33.1	18	10	20.5
24.0	3	6.0	6	2	26.5	18	10	27.8
24.0	3	7.0	6	2	19.9	18	10	35.3
25.0	3	.0	6	2	46.4	18	9	26.7
25.0	3	1.0	6	2	38.6	18	9	35.3
25.0	3	2.0	6	2	30.7	18	9	44.0
25.0	3	3.0	6	2	22.8	18	9	52.8
25.0	3	4.0	6	2	14.7	18	10	1.7
25.0	3	5.0	6	2	6.6	18	10	10.6
25.0	3	6.0	6	1	58.4	18	10	19.7
25.0	3	7.0	6	1	50.1	18	10	28.8
26.0	3	.0	6	2	28.2	18	9	8.6
26.0	3	1.0	6	2	18.8	18	9	18.9
26.0	3	2.0	6	2	9.2	18	9	29.2
26.0	3	3.0	6	1	59.6	18	9	39.7
26.0	3	4.0	6	1	49.9	18	9	50.2
26.0	3	5.0	6	1	40.2	18	10	.8
26.0	3	6.0	6	1	30.3	18	10	11.5
26.0	3	7.0	6	1	20.3	18	10	22.3
27.0	3	.0	6	2	10.0	18	8	50.5
27.0	3	1.0	6	1	58.9	18	9	2.4
27.0	3	2.0	6	1	47.7	18	9	14.4
27.0	3	3.0	6	1	36.5	18	9	26.5
27.0	3	4.0	6	1	25.1	18	9	38.7
27.0	3	5.0	6	1	13.7	18	9	50.9
27.0	3	6.0	6	1	2.2	18	10	3.3
27.0	3	7.0	6	0	50.6	18	10	15.8
28.0	3	.0	6	1	51.8	18	8	32.4
28.0	3	1.0	6	1	39.1	18	8	46.0
28.0	3	2.0	6	1	26.3	18	8	59.7
28.0	3	3.0	6	1	13.4	18	9	13.4
28.0	3	4.0	6	1	.4	18	9	27.2
28.0	3	5.0	6	0	47.3	18	9	41.1

28.0	3	6.0	6	0	34.1	18	9	55.1
28.0	3	7.0	6	0	20.8	18	10	9.2
29.0	3	.0	6	1	33.7	18	8	14.4
29.0	3	1.0	6	1	19.3	18	8	29.7
29.0	3	2.0	6	1	4.8	18	8	44.9
29.0	3	3.0	6	0	50.3	18	9	.3
29.0	3	4.0	6	0	35.6	18	9	15.8
29.0	3	5.0	6	0	20.9	18	9	31.3
29.0	3	6.0	6	0	6.1	18	9	47.0
29.0	3	7.0	5	59	51.1	18	10	2.8
30.0	3	.0	6	1	15.6	18	7	56.5
30.0	3	1.0	6	0	59.5	18	8	13.4
30.0	3	2.0	6	0	43.4	18	8	30.3
30.0	3	3.0	6	0	27.3	18	8	47.3
30.0	3	4.0	6	0	11.0	18	9	4.4
30.0	3	5.0	5	59	54.6	18	9	21.6
30.0	3	6.0	5	59	38.1	18	9	38.9
30.0	3	7.0	5	59	21.5	18	9	56.3
31.0	3	.0	6	0	57.5	18	7	38.7
31.0	3	1.0	6	0	39.9	18	7	57.2
31.0	3	2.0	6	0	22.1	18	8	15.7
31.0	3	3.0	6	0	4.3	18	8	34.3
31.0	3	4.0	5	59	46.4	18	8	53.1
31.0	3	5.0	5	59	28.4	18	9	11.9
31.0	3	6.0	5	59	10.3	18	9	30.9
31.0	3	7.0	5	58	52.0	18	9	50.0

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
1.0	4	.0	6	0	39.6	18	7	20.9
1.0	4	1.0	6	0	20.3	18	7	41.0
1.0	4	2.0	6	0	.9	18	8	1.2
1.0	4	3.0	5	59	41.5	18	8	21.5
1.0	4	4.0	5	59	21.9	18	8	41.9
1.0	4	5.0	5	59	2.3	18	9	2.3
1.0	4	6.0	5	58	42.5	18	9	22.9
1.0	4	7.0	5	58	22.6	18	9	43.7
2.0	4	.0	6	0	21.8	18	7	3.3
2.0	4	1.0	6	0	.8	18	7	25.1
2.0	4	2.0	5	59	39.9	18	7	46.9
2.0	4	3.0	5	59	18.8	18	8	8.8
2.0	4	4.0	5	58	57.6	18	8	30.8
2.0	4	5.0	5	58	36.3	18	8	52.9
2.0	4	6.0	5	58	14.9	18	9	15.1
2.0	4	7.0	5	57	53.3	18	9	37.5
3.0	4	.0	6	0	4.0	18	6	45.9
3.0	4	1.0	5	59	41.5	18	7	9.2



3.0	4	2.0	5 59	18.9	18	7	32.6
3.0	4	3.0	5 58	56.2	18	7	56.2
3.0	4	4.0	5 58	33.4	18	8	19.8
3.0	4	5.0	5 58	10.5	18	8	43.5
3.0	4	6.0	5 57	47.4	18	9	7.4
3.0	4	7.0	5 57	24.2	18	9	31.4
4.0	4	.0	5 59	46.5	18	6	28.6
4.0	4	1.0	5 59	22.3	18	6	53.5
4.0	4	2.0	5 58	58.1	18	7	18.6
4.0	4	3.0	5 58	33.8	18	7	43.7
4.0	4	4.0	5 58	9.3	18	8	8.9
4.0	4	5.0	5 57	44.8	18	8	34.3
4.0	4	6.0	5 57	20.1	18	8	59.8
4.0	4	7.0	5 56	55.2	18	9	25.5
5.0	4	.0	5 59	29.1	18	6	11.4
5.0	4	1.0	5 59	3.3	18	6	38.0
5.0	4	2.0	5 58	37.4	18	7	4.6
5.0	4	3.0	5 58	11.5	18	7	31.4
5.0	4	4.0	5 57	45.5	18	7	58.2
5.0	4	5.0	5 57	19.3	18	8	25.2
5.0	4	6.0	5 56	53.0	18	8	52.4
5.0	4	7.0	5 56	26.5	18	9	19.7
6.0	4	.0	5 59	11.8	18	5	54.5
6.0	4	1.0	5 58	44.4	18	6	22.7
6.0	4	2.0	5 58	17.0	18	6	50.9
6.0	4	3.0	5 57	49.4	18	7	19.3
6.0	4	4.0	5 57	21.8	18	7	47.7
6.0	4	5.0	5 56	54.0	18	8	16.3
6.0	4	6.0	5 56	26.0	18	8	45.1
6.0	4	7.0	5 55	57.9	18	9	14.0
7.0	4	.0	5 58	54.8	18	5	37.7
7.0	4	1.0	5 58	25.8	18	6	7.5
7.0	4	2.0	5 57	56.7	18	6	37.4
7.0	4	3.0	5 57	27.6	18	7	7.3
7.0	4	4.0	5 56	58.3	18	7	37.4
7.0	4	5.0	5 56	28.9	18	8	7.6
7.0	4	6.0	5 55	59.3	18	8	38.0
7.0	4	7.0	5 55	29.6	18	9	8.5
8.0	4	.0	5 58	37.9	18	5	21.2
8.0	4	1.0	5 58	7.3	18	5	52.6
8.0	4	2.0	5 57	36.7	18	6	24.0
8.0	4	3.0	5 57	5.9	18	6	55.6
8.0	4	4.0	5 56	35.1	18	7	27.2
8.0	4	5.0	5 56	4.0	18	7	59.0
8.0	4	6.0	5 55	32.9	18	8	31.0
8.0	4	7.0	5 55	1.5	18	9	3.2
9.0	4	.0	5 58	21.3	18	5	4.9
9.0	4	1.0	5 57	49.1	18	5	37.9

9.0	4	2.0	5 57 16.9	18 6 10.9
9.0	4	3.0	5 56 44.5	18 6 44.0
9.0	4	4.0	5 56 12.0	18 7 17.3
9.0	4	5.0	5 55 39.4	18 7 50.7
9.0	4	6.0	5 55 6.7	18 8 24.3
9.0	4	7.0	5 54 33.7	18 8 58.0
10.0	4	.0	5 58 4.8	18 4 48.9
10.0	4	1.0	5 57 31.1	18 5 23.4
10.0	4	2.0	5 56 57.3	18 5 58.0
10.0	4	3.0	5 56 23.4	18 6 32.7
10.0	4	4.0	5 55 49.3	18 7 7.6
10.0	4	5.0	5 55 15.1	18 7 42.6
10.0	4	6.0	5 54 40.7	18 8 17.7
10.0	4	7.0	5 54 6.2	18 8 53.1
11.0	4	.0	5 57 48.7	18 4 33.1
11.0	4	1.0	5 57 13.4	18 5 9.2
11.0	4	2.0	5 56 38.0	18 5 45.4
11.0	4	3.0	5 56 2.5	18 6 21.7
11.0	4	4.0	5 55 26.8	18 6 58.1
11.0	4	5.0	5 54 51.0	18 7 34.7
11.0	4	6.0	5 54 15.1	18 8 11.4
11.0	4	7.0	5 53 38.9	18 8 48.4
12.0	4	.0	5 57 32.8	18 4 17.6
12.0	4	1.0	5 56 55.9	18 4 55.2
12.0	4	2.0	5 56 18.9	18 5 33.0
12.0	4	3.0	5 55 41.8	18 6 10.8
12.0	4	4.0	5 55 4.6	18 6 48.8
12.0	4	5.0	5 54 27.3	18 7 27.0
12.0	4	6.0	5 53 49.7	18 8 5.3
12.0	4	7.0	5 53 12.0	18 8 43.9
13.0	4	.0	5 57 17.1	18 4 2.3
13.0	4	1.0	5 56 38.7	18 4 41.6
13.0	4	2.0	5 56 .2	18 5 20.9
13.0	4	3.0	5 55 21.5	18 6 .3
13.0	4	4.0	5 54 42.7	18 6 39.8
13.0	4	5.0	5 54 3.8	18 7 19.6
13.0	4	6.0	5 53 24.7	18 7 59.5
13.0	4	7.0	5 52 45.3	18 8 39.6
14.0	4	.0	5 57 1.8	18 3 47.4
14.0	4	1.0	5 56 21.8	18 4 28.2
14.0	4	2.0	5 55 41.7	18 5 9.0
14.0	4	3.0	5 55 1.5	18 5 50.0
14.0	4	4.0	5 54 21.2	18 6 31.1
14.0	4	5.0	5 53 40.7	18 7 12.4
14.0	4	6.0	5 52 60.0	18 7 53.9
14.0	4	7.0	5 52 19.1	18 8 35.6

TARIKH LATITUD WAKTU TERBIT WAKTU TERBENAM  
MATAHARI MATAHARI

H	B	~	j	m	s	j	m	s
15.0	4	.0	5	56	46.8	18	3	32.8
15.0	4	1.0	5	56	5.2	18	4	15.1
15.0	4	2.0	5	55	23.6	18	4	57.5
15.0	4	3.0	5	54	41.8	18	5	40.1
15.0	4	4.0	5	53	60.0	18	6	22.7
15.0	4	5.0	5	53	17.9	18	7	5.5
15.0	4	6.0	5	52	35.6	18	7	48.6
15.0	4	7.0	5	51	53.2	18	8	31.8
16.0	4	.0	5	56	32.1	18	3	18.6
16.0	4	1.0	5	55	49.0	18	4	2.4
16.0	4	2.0	5	55	5.8	18	4	46.3
16.0	4	3.0	5	54	22.5	18	5	30.4
16.0	4	4.0	5	53	39.1	18	6	14.6
16.0	4	5.0	5	52	55.5	18	6	59.0
16.0	4	6.0	5	52	11.7	18	7	43.5
16.0	4	7.0	5	51	27.6	18	8	28.4
17.0	4	.0	5	56	17.7	18	3	4.7
17.0	4	1.0	5	55	33.1	18	3	50.0
17.0	4	2.0	5	54	48.4	18	4	35.5
17.0	4	3.0	5	54	3.6	18	5	21.1
17.0	4	4.0	5	53	18.6	18	6	6.8
17.0	4	5.0	5	52	33.5	18	6	52.7
17.0	4	6.0	5	51	48.1	18	7	38.8
17.0	4	7.0	5	51	2.5	18	8	25.2
18.0	4	.0	5	56	3.7	18	2	51.1
18.0	4	1.0	5	55	17.6	18	3	38.0
18.0	4	2.0	5	54	31.4	18	4	25.0
18.0	4	3.0	5	53	45.0	18	5	12.1
18.0	4	4.0	5	52	58.5	18	5	59.3
18.0	4	5.0	5	52	11.9	18	6	46.8
18.0	4	6.0	5	51	25.0	18	7	34.4
18.0	4	7.0	5	50	37.9	18	8	22.3
19.0	4	.0	5	55	50.1	18	2	38.0
19.0	4	1.0	5	55	2.5	18	3	26.4
19.0	4	2.0	5	54	14.7	18	4	14.9
19.0	4	3.0	5	53	26.9	18	5	3.5
19.0	4	4.0	5	52	38.9	18	5	52.2
19.0	4	5.0	5	51	50.7	18	6	41.2
19.0	4	6.0	5	51	2.3	18	7	30.4
19.0	4	7.0	5	50	13.6	18	8	19.8
20.0	4	.0	5	55	36.9	18	2	25.3
20.0	4	1.0	5	54	47.8	18	3	15.2
20.0	4	2.0	5	53	58.5	18	4	5.2
20.0	4	3.0	5	53	9.2	18	4	55.3
20.0	4	4.0	5	52	19.7	18	5	45.5
20.0	4	5.0	5	51	30.0	18	6	36.0
20.0	4	6.0	5	50	40.0	18	7	26.6

20.0	4	7.0	5 49 49.9	18 8 17.6
21.0	4	.0	5 55 24.1	18 2 13.0
21.0	4	1.0	5 54 33.5	18 3 4.4
21.0	4	2.0	5 53 42.8	18 3 55.8
21.0	4	3.0	5 52 51.9	18 4 47.4
21.0	4	4.0	5 52 .9	18 5 39.2
21.0	4	5.0	5 51 9.7	18 6 31.1
21.0	4	6.0	5 50 18.3	18 7 23.3
21.0	4	7.0	5 49 26.6	18 8 15.7
22.0	4	.0	5 55 11.7	18 2 1.2
22.0	4	1.0	5 54 19.6	18 2 54.0
22.0	4	2.0	5 53 27.4	18 3 46.9
22.0	4	3.0	5 52 35.1	18 4 40.0
22.0	4	4.0	5 51 42.6	18 5 33.2
22.0	4	5.0	5 50 49.9	18 6 26.7
22.0	4	6.0	5 49 57.0	18 7 20.3
22.0	4	7.0	5 49 3.8	18 8 14.3
23.0	4	.0	5 54 59.8	18 1 49.8
23.0	4	1.0	5 54 6.3	18 2 44.1
23.0	4	2.0	5 53 12.6	18 3 38.5
23.0	4	3.0	5 52 18.8	18 4 33.0
23.0	4	4.0	5 51 24.8	18 5 27.7
23.0	4	5.0	5 50 30.7	18 6 22.6
23.0	4	6.0	5 49 36.3	18 7 17.8
23.0	4	7.0	5 48 41.6	18 8 13.2
24.0	4	.0	5 54 48.4	18 1 38.9
24.0	4	1.0	5 53 53.4	18 2 34.7
24.0	4	2.0	5 52 58.3	18 3 30.5
24.0	4	3.0	5 52 3.0	18 4 26.5
24.0	4	4.0	5 51 7.6	18 5 22.6
24.0	4	5.0	5 50 11.9	18 6 19.0
24.0	4	6.0	5 49 16.1	18 7 15.6
24.0	4	7.0	5 48 19.9	18 8 12.5
25.0	4	.0	5 54 37.5	18 1 28.5
25.0	4	1.0	5 53 41.0	18 2 25.7
25.0	4	2.0	5 52 44.4	18 3 23.0
25.0	4	3.0	5 51 47.7	18 4 20.4
25.0	4	4.0	5 50 50.8	18 5 18.0
25.0	4	5.0	5 49 53.7	18 6 15.8
25.0	4	6.0	5 48 56.4	18 7 13.9
25.0	4	7.0	5 47 58.8	18 8 12.2
26.0	4	.0	5 54 27.0	18 1 18.6
26.0	4	1.0	5 53 29.1	18 2 17.2
26.0	4	2.0	5 52 31.1	18 3 15.9
26.0	4	3.0	5 51 32.9	18 4 14.8
26.0	4	4.0	5 50 34.6	18 5 13.8
26.0	4	5.0	5 49 36.1	18 6 13.1
26.0	4	6.0	5 48 37.3	18 7 12.6

26.0	4	7.0	5 47 38.2	18 8 12.4
27.0	4	.0	5 54 17.0	18 1 9.2
27.0	4	1.0	5 53 17.7	18 2 9.2
27.0	4	2.0	5 52 18.3	18 3 9.4
27.0	4	3.0	5 51 18.7	18 4 9.6
27.0	4	4.0	5 50 19.0	18 5 10.1
27.0	4	5.0	5 49 19.0	18 6 10.8
27.0	4	6.0	5 48 18.8	18 7 11.7
27.0	4	7.0	5 47 18.3	18 8 12.9

28.0	4	.0	5 54 7.6	18 1 .3
28.0	4	1.0	5 53 6.9	18 2 1.8
28.0	4	2.0	5 52 6.0	18 3 3.3
28.0	4	3.0	5 51 5.1	18 4 5.0
28.0	4	4.0	5 50 3.9	18 5 6.8
28.0	4	5.0	5 49 2.5	18 6 8.9
28.0	4	6.0	5 48 .9	18 7 11.3
28.0	4	7.0	5 46 58.9	18 8 13.9

29.0	4	.0	5 53 58.7	18 0 52.0
29.0	4	1.0	5 52 56.6	18 1 54.8
29.0	4	2.0	5 51 54.3	18 2 57.7
29.0	4	3.0	5 50 52.0	18 4 .8
29.0	4	4.0	5 49 49.4	18 5 4.1
29.0	4	5.0	5 48 46.6	18 6 7.5
29.0	4	6.0	5 47 43.6	18 7 11.3
29.0	4	7.0	5 46 40.2	18 8 15.4

30.0	4	.0	5 53 50.3	18 0 44.2
30.0	4	1.0	5 52 46.8	18 1 48.4
30.0	4	2.0	5 51 43.2	18 2 52.7
30.0	4	3.0	5 50 39.4	18 3 57.1
30.0	4	4.0	5 49 35.5	18 5 1.8
30.0	4	5.0	5 48 31.3	18 6 6.6
30.0	4	6.0	5 47 26.9	18 7 11.8
30.0	4	7.0	5 46 22.1	18 8 17.2

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s

1.0	5	.0	5 53 42.5	18 0 36.9
1.0	5	1.0	5 52 37.6	18 1 42.5
1.0	5	2.0	5 51 32.6	18 2 48.1
1.0	5	3.0	5 50 27.5	18 3 53.9
1.0	5	4.0	5 49 22.2	18 4 59.9
1.0	5	5.0	5 48 16.6	18 6 6.2
1.0	5	6.0	5 47 10.8	18 7 12.7
1.0	5	7.0	5 46 4.6	18 8 19.5

2.0	5	.0	5 53 35.2	18 0 30.2
2.0	5	1.0	5 52 28.9	18 1 37.1
2.0	5	2.0	5 51 22.6	18 2 44.1

2.0	5	3.0	5 50	16.1	18	3	51.3
2.0	5	4.0	5 49	9.5	18	4	58.6
2.0	5	5.0	5 48	2.5	18	6	6.2
2.0	5	6.0	5 46	55.3	18	7	14.1
2.0	5	7.0	5 45	47.8	18	8	22.3
3.0	5	.0	5 53	28.4	18	0	24.1
3.0	5	1.0	5 52	20.8	18	1	32.3
3.0	5	2.0	5 51	13.2	18	2	40.6
3.0	5	3.0	5 50	5.4	18	3	49.1
3.0	5	4.0	5 48	57.3	18	4	57.8
3.0	5	5.0	5 47	49.1	18	6	6.7
3.0	5	6.0	5 46	40.5	18	7	15.9
3.0	5	7.0	5 45	31.7	18	8	25.5
4.0	5	.0	5 53	22.2	18	0	18.5
4.0	5	1.0	5 52	13.3	18	1	28.0
4.0	5	2.0	5 51	4.3	18	2	37.6
4.0	5	3.0	5 49	55.2	18	3	47.4
4.0	5	4.0	5 48	45.9	18	4	57.4
4.0	5	5.0	5 47	36.3	18	6	7.7
4.0	5	6.0	5 46	26.4	18	7	18.2
4.0	5	7.0	5 45	16.2	18	8	29.1
5.0	5	.0	5 53	16.6	18	0	13.4
5.0	5	1.0	5 52	6.4	18	1	24.3
5.0	5	2.0	5 50	56.1	18	2	35.2
5.0	5	3.0	5 49	45.6	18	3	46.3
5.0	5	4.0	5 48	35.0	18	4	57.6
5.0	5	5.0	5 47	24.1	18	6	9.1
5.0	5	6.0	5 46	12.9	18	7	21.0
5.0	5	7.0	5 45	1.3	18	8	33.2
6.0	5	.0	5 53	11.5	18	0	9.0
6.0	5	1.0	5 52	.0	18	1	21.1
6.0	5	2.0	5 50	48.4	18	2	33.3
6.0	5	3.0	5 49	36.7	18	3	45.6
6.0	5	4.0	5 48	24.7	18	4	58.2
6.0	5	5.0	5 47	12.5	18	6	11.1
6.0	5	6.0	5 46	.0	18	7	24.2
6.0	5	7.0	5 44	47.2	18	8	37.7
7.0	5	.0	5 53	6.9	18	0	5.0
7.0	5	1.0	5 51	54.2	18	1	18.4
7.0	5	2.0	5 50	41.3	18	2	31.9
7.0	5	3.0	5 49	28.3	18	3	45.5
7.0	5	4.0	5 48	15.1	18	4	59.4
7.0	5	5.0	5 47	1.6	18	6	13.5
7.0	5	6.0	5 45	47.9	18	7	27.9
7.0	5	7.0	5 44	33.7	18	8	42.7
8.0	5	.0	5 53	2.9	18	0	1.7
8.0	5	1.0	5 51	49.0	18	1	16.3
8.0	5	2.0	5 50	34.9	18	2	31.0

8.0	5	3.0	5 49	20.6	18	3	45.9
8.0	5	4.0	5 48	6.1	18	5	1.0
8.0	5	5.0	5 46	51.4	18	6	16.3
8.0	5	6.0	5 45	36.3	18	7	32.0
8.0	5	7.0	5 44	20.9	18	8	48.0
9.0	5	.0	5 52	59.5	17	59	58.8
9.0	5	1.0	5 51	44.3	18	1	14.7
9.0	5	2.0	5 50	29.0	18	2	30.6
9.0	5	3.0	5 49	13.5	18	3	46.7
9.0	5	4.0	5 47	57.8	18	5	3.1
9.0	5	5.0	5 46	41.8	18	6	19.7
9.0	5	6.0	5 45	25.5	18	7	36.6
9.0	5	7.0	5 44	8.8	18	8	53.9
10.0	5	.0	5 52	56.7	17	59	56.6
10.0	5	1.0	5 51	40.2	18	1	13.6
10.0	5	2.0	5 50	23.7	18	2	30.8
10.0	5	3.0	5 49	7.0	18	3	48.1
10.0	5	4.0	5 47	50.0	18	5	5.6
10.0	5	5.0	5 46	32.8	18	6	23.4
10.0	5	6.0	5 45	15.3	18	7	41.6
10.0	5	7.0	5 43	57.4	18	9	.1
11.0	5	.0	5 52	54.3	17	59	54.9
11.0	5	1.0	5 51	36.7	18	1	13.1
11.0	5	2.0	5 50	19.0	18	2	31.4
11.0	5	3.0	5 49	1.0	18	3	49.9
11.0	5	4.0	5 47	42.9	18	5	8.7
11.0	5	5.0	5 46	24.5	18	6	27.7
11.0	5	6.0	5 45	5.8	18	7	47.0
11.0	5	7.0	5 43	46.6	18	9	6.7
12.0	5	.0	5 52	52.6	17	59	53.7
12.0	5	1.0	5 51	33.8	18	1	13.1
12.0	5	2.0	5 50	14.8	18	2	32.6
12.0	5	3.0	5 48	55.7	18	3	52.3
12.0	5	4.0	5 47	36.4	18	5	12.2
12.0	5	5.0	5 46	16.8	18	6	32.4
12.0	5	6.0	5 44	56.9	18	7	52.9
12.0	5	7.0	5 43	36.6	18	9	13.8
13.0	5	.0	5 52	51.4	17	59	53.1
13.0	5	1.0	5 51	31.4	18	1	13.6
13.0	5	2.0	5 50	11.3	18	2	34.3
13.0	5	3.0	5 48	51.1	18	3	55.1
13.0	5	4.0	5 47	30.6	18	5	16.2
13.0	5	5.0	5 46	9.8	18	6	37.5
13.0	5	6.0	5 44	48.7	18	7	59.2
13.0	5	7.0	5 43	27.3	18	9	21.2
14.0	5	.0	5 52	50.7	17	59	53.0
14.0	5	1.0	5 51	29.6	18	1	14.7
14.0	5	2.0	5 50	8.4	18	2	36.5

14.0	5	3.0	5 48 47.0	18 3 58.4
14.0	5	4.0	5 47 25.4	18 5 20.6
14.0	5	5.0	5 46 3.5	18 6 43.1
14.0	5	6.0	5 44 41.2	18 8 5.9
14.0	5	7.0	5 43 18.6	18 9 29.1

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s

15.0	5	.0	5 52 50.6	17 59 53.5
15.0	5	1.0	5 51 28.4	18 1 16.3
15.0	5	2.0	5 50 6.1	18 2 39.2
15.0	5	3.0	5 48 43.6	18 4 2.2
15.0	5	4.0	5 47 20.8	18 5 25.5
15.0	5	5.0	5 45 57.8	18 6 49.1
15.0	5	6.0	5 44 34.4	18 8 13.0
15.0	5	7.0	5 43 10.7	18 9 37.3

16.0	5	.0	5 52 51.0	17 59 54.6
16.0	5	1.0	5 51 27.8	18 1 18.4
16.0	5	2.0	5 50 4.3	18 2 42.4
16.0	5	3.0	5 48 40.7	18 4 6.5
16.0	5	4.0	5 47 16.9	18 5 30.9
16.0	5	5.0	5 45 52.8	18 6 55.5
16.0	5	6.0	5 44 28.3	18 8 20.6
16.0	5	7.0	5 43 3.4	18 9 46.0

17.0	5	.0	5 52 52.1	17 59 56.2
17.0	5	1.0	5 51 27.7	18 1 21.0
17.0	5	2.0	5 50 3.2	18 2 46.1
17.0	5	3.0	5 48 38.5	18 4 11.3
17.0	5	4.0	5 47 13.6	18 5 36.7
17.0	5	5.0	5 45 48.4	18 7 2.4
17.0	5	6.0	5 44 22.9	18 8 28.5
17.0	5	7.0	5 42 56.9	18 9 55.0

18.0	5	.0	5 52 53.6	17 59 58.3
18.0	5	1.0	5 51 28.2	18 1 24.2
18.0	5	2.0	5 50 2.7	18 2 50.3
18.0	5	3.0	5 48 36.9	18 4 16.5
18.0	5	4.0	5 47 11.0	18 5 43.0
18.0	5	5.0	5 45 44.7	18 7 9.8
18.0	5	6.0	5 44 18.1	18 8 36.9
18.0	5	7.0	5 42 51.1	18 10 4.4

19.0	5	.0	5 52 55.7	18 0 1.0
19.0	5	1.0	5 51 29.3	18 1 27.9
19.0	5	2.0	5 50 2.7	18 2 55.0
19.0	5	3.0	5 48 36.0	18 4 22.2
19.0	5	4.0	5 47 9.0	18 5 49.7
19.0	5	5.0	5 45 41.7	18 7 17.5
19.0	5	6.0	5 44 14.1	18 8 45.7
19.0	5	7.0	5 42 46.0	18 10 14.2



20.0	5	.0	5 52 58.4	18 0 4.2
20.0	5	1.0	5 51 31.0	18 1 32.1
20.0	5	2.0	5 50 3.4	18 3 .2
20.0	5	3.0	5 48 35.7	18 4 28.4
20.0	5	4.0	5 47 7.7	18 5 56.9
20.0	5	5.0	5 45 39.4	18 7 25.7
20.0	5	6.0	5 44 10.7	18 8 54.8
20.0	5	7.0	5 42 41.6	18 10 24.4
21.0	5	.0	5 53 1.6	18 0 8.0
21.0	5	1.0	5 51 33.2	18 1 36.9
21.0	5	2.0	5 50 4.7	18 3 5.9
21.0	5	3.0	5 48 36.0	18 4 35.1
21.0	5	4.0	5 47 7.0	18 6 4.5
21.0	5	5.0	5 45 37.7	18 7 34.3
21.0	5	6.0	5 44 8.1	18 9 4.4
21.0	5	7.0	5 42 38.0	18 10 35.0
22.0	5	.0	5 53 5.4	18 0 12.3
22.0	5	1.0	5 51 36.0	18 1 42.1
22.0	5	2.0	5 50 6.5	18 3 12.1
22.0	5	3.0	5 48 36.9	18 4 42.2
22.0	5	4.0	5 47 6.9	18 6 12.6
22.0	5	5.0	5 45 36.7	18 7 43.3
22.0	5	6.0	5 44 6.1	18 9 14.4
22.0	5	7.0	5 42 35.1	18 10 45.9
23.0	5	.0	5 53 9.7	18 0 17.1
23.0	5	1.0	5 51 39.4	18 1 47.9
23.0	5	2.0	5 50 9.0	18 3 18.7
23.0	5	3.0	5 48 38.4	18 4 49.8
23.0	5	4.0	5 47 7.5	18 6 21.1
23.0	5	5.0	5 45 36.4	18 7 52.7
23.0	5	6.0	5 44 4.8	18 9 24.7
23.0	5	7.0	5 42 32.9	18 10 57.1
24.0	5	.0	5 53 14.5	18 0 22.5
24.0	5	1.0	5 51 43.3	18 1 54.1
24.0	5	2.0	5 50 12.0	18 3 25.9
24.0	5	3.0	5 48 40.5	18 4 57.8
24.0	5	4.0	5 47 8.8	18 6 30.0
24.0	5	5.0	5 45 36.7	18 8 2.5
24.0	5	6.0	5 44 4.3	18 9 35.4
24.0	5	7.0	5 42 31.4	18 11 8.7
25.0	5	.0	5 53 19.9	18 0 28.4
25.0	5	1.0	5 51 47.8	18 2 .9
25.0	5	2.0	5 50 15.7	18 3 33.5
25.0	5	3.0	5 48 43.3	18 5 6.3
25.0	5	4.0	5 47 10.7	18 6 39.3
25.0	5	5.0	5 45 37.7	18 8 12.7
25.0	5	6.0	5 44 4.4	18 9 46.4
25.0	5	7.0	5 42 30.6	18 11 20.6

26.0	5	.0	5 53 25.8	18 0 34.8
26.0	5	1.0	5 51 52.9	18 2 8.1
26.0	5	2.0	5 50 19.9	18 3 41.5
26.0	5	3.0	5 48 46.7	18 5 15.1
26.0	5	4.0	5 47 13.2	18 6 49.0
26.0	5	5.0	5 45 39.4	18 8 23.2
26.0	5	6.0	5 44 5.2	18 9 57.8
26.0	5	7.0	5 42 30.6	18 11 32.9
27.0	5	.0	5 53 32.2	18 0 41.7
27.0	5	1.0	5 51 58.5	18 2 15.8
27.0	5	2.0	5 50 24.6	18 3 50.0
27.0	5	3.0	5 48 50.6	18 5 24.4
27.0	5	4.0	5 47 16.3	18 6 59.1
27.0	5	5.0	5 45 41.7	18 8 34.2
27.0	5	6.0	5 44 6.7	18 10 9.6
27.0	5	7.0	5 42 31.2	18 11 45.4
28.0	5	.0	5 53 39.1	18 0 49.0
28.0	5	1.0	5 52 4.6	18 2 23.9
28.0	5	2.0	5 50 29.9	18 3 58.9
28.0	5	3.0	5 48 55.1	18 5 34.1
28.0	5	4.0	5 47 20.0	18 7 9.6
28.0	5	5.0	5 45 44.6	18 8 45.4
28.0	5	6.0	5 44 8.8	18 10 21.6
28.0	5	7.0	5 42 32.5	18 11 58.3
29.0	5	.0	5 53 46.4	18 0 56.9
29.0	5	1.0	5 52 11.2	18 2 32.5
29.0	5	2.0	5 50 35.8	18 4 8.3
29.0	5	3.0	5 49 .2	18 5 44.2
29.0	5	4.0	5 47 24.4	18 7 20.5
29.0	5	5.0	5 45 48.2	18 8 57.0
29.0	5	6.0	5 44 11.6	18 10 34.0
29.0	5	7.0	5 42 34.5	18 12 11.4
30.0	5	.0	5 53 54.3	18 1 5.2
30.0	5	1.0	5 52 18.3	18 2 41.5
30.0	5	2.0	5 50 42.2	18 4 18.0
30.0	5	3.0	5 49 5.9	18 5 54.7
30.0	5	4.0	5 47 29.3	18 7 31.6
30.0	5	5.0	5 45 52.3	18 9 8.9
30.0	5	6.0	5 44 15.0	18 10 46.6
30.0	5	7.0	5 42 37.2	18 12 24.7
31.0	5	.0	5 54 2.6	18 1 13.9
31.0	5	1.0	5 52 25.9	18 2 50.9
31.0	5	2.0	5 50 49.1	18 4 28.1
31.0	5	3.0	5 49 12.0	18 6 5.5
31.0	5	4.0	5 47 34.7	18 7 43.1
31.0	5	5.0	5 45 57.1	18 9 21.1
31.0	5	6.0	5 44 19.1	18 10 59.5
31.0	5	7.0	5 42 40.6	18 12 38.3

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
1.0	6	.0	5	54	11.3	18	1	23.1
1.0	6	1.0	5	52	34.0	18	3	.7
1.0	6	2.0	5	50	56.5	18	4	38.6
1.0	6	3.0	5	49	18.8	18	6	16.6
1.0	6	4.0	5	47	40.8	18	7	54.9
1.0	6	5.0	5	46	2.5	18	9	33.6
1.0	6	6.0	5	44	23.7	18	11	12.6
1.0	6	7.0	5	42	44.6	18	12	52.1
2.0	6	.0	5	54	20.5	18	1	32.6
2.0	6	1.0	5	52	42.5	18	3	10.9
2.0	6	2.0	5	51	4.3	18	4	49.4
2.0	6	3.0	5	49	26.0	18	6	28.0
2.0	6	4.0	5	47	47.4	18	8	7.0
2.0	6	5.0	5	46	8.4	18	9	46.3
2.0	6	6.0	5	44	29.0	18	11	25.9
2.0	6	7.0	5	42	49.2	18	13	6.1
3.0	6	.0	5	54	30.0	18	1	42.5
3.0	6	1.0	5	52	51.4	18	3	21.5
3.0	6	2.0	5	51	12.6	18	5	.5
3.0	6	3.0	5	49	33.7	18	6	39.8
3.0	6	4.0	5	47	54.4	18	8	19.3
3.0	6	5.0	5	46	14.9	18	9	59.2
3.0	6	6.0	5	44	34.9	18	11	39.5
3.0	6	7.0	5	42	54.4	18	13	20.2
4.0	6	.0	5	54	39.9	18	1	52.8
4.0	6	1.0	5	53	.7	18	3	32.3
4.0	6	2.0	5	51	21.4	18	5	11.9
4.0	6	3.0	5	49	41.9	18	6	51.8
4.0	6	4.0	5	48	2.0	18	8	31.9
4.0	6	5.0	5	46	21.9	18	10	12.3
4.0	6	6.0	5	44	41.3	18	11	53.2
4.0	6	7.0	5	43	.2	18	13	34.5
5.0	6	.0	5	54	50.2	18	2	3.4
5.0	6	1.0	5	53	10.5	18	3	43.5
5.0	6	2.0	5	51	30.6	18	5	23.6
5.0	6	3.0	5	49	50.5	18	7	4.0
5.0	6	4.0	5	48	10.1	18	8	44.6
5.0	6	5.0	5	46	29.4	18	10	25.6
5.0	6	6.0	5	44	48.2	18	12	7.0
5.0	6	7.0	5	43	6.6	18	13	48.9
6.0	6	.0	5	55	.8	18	2	14.4
6.0	6	1.0	5	53	20.6	18	3	54.9
6.0	6	2.0	5	51	40.1	18	5	35.6
6.0	6	3.0	5	49	59.5	18	7	16.4

6.0	6	4.0	5 48 18.6	18 8 57.6
6.0	6	5.0	5 46 37.4	18 10 39.1
6.0	6	6.0	5 44 55.7	18 12 21.0
6.0	6	7.0	5 43 13.5	18 14 3.4
7.0	6	.0	5 55 11.7	18 2 25.6
7.0	6	1.0	5 53 31.0	18 4 6.6
7.0	6	2.0	5 51 50.1	18 5 47.7
7.0	6	3.0	5 50 9.0	18 7 29.1
7.0	6	4.0	5 48 27.6	18 9 10.7
7.0	6	5.0	5 46 45.8	18 10 52.7
7.0	6	6.0	5 45 3.7	18 12 35.1
7.0	6	7.0	5 43 21.0	18 14 17.9
8.0	6	.0	5 55 22.9	18 2 37.1
8.0	6	1.0	5 53 41.7	18 4 18.5
8.0	6	2.0	5 52 .3	18 6 .1
8.0	6	3.0	5 50 18.8	18 7 41.9
8.0	6	4.0	5 48 36.9	18 9 23.9
8.0	6	5.0	5 46 54.7	18 11 6.3
8.0	6	6.0	5 45 12.1	18 12 49.2
8.0	6	7.0	5 43 29.0	18 14 32.5
9.0	6	.0	5 55 34.4	18 2 48.8
9.0	6	1.0	5 53 52.7	18 4 30.6
9.0	6	2.0	5 52 10.9	18 6 12.6
9.0	6	3.0	5 50 29.0	18 7 54.8
9.0	6	4.0	5 48 46.7	18 9 37.3
9.0	6	5.0	5 47 4.0	18 11 20.1
9.0	6	6.0	5 45 21.0	18 13 3.4
9.0	6	7.0	5 43 37.5	18 14 47.1
10.0	6	.0	5 55 46.1	18 3 .7
10.0	6	1.0	5 54 4.0	18 4 42.9
10.0	6	2.0	5 52 21.9	18 6 25.3
10.0	6	3.0	5 50 39.5	18 8 7.9
10.0	6	4.0	5 48 56.8	18 9 50.7
10.0	6	5.0	5 47 13.8	18 11 33.9
10.0	6	6.0	5 45 30.3	18 13 17.6
10.0	6	7.0	5 43 46.4	18 15 1.7
11.0	6	.0	5 55 58.0	18 3 12.9
11.0	6	1.0	5 54 15.6	18 4 55.4
11.0	6	2.0	5 52 33.0	18 6 38.1
11.0	6	3.0	5 50 50.3	18 8 21.0
11.0	6	4.0	5 49 7.3	18 10 4.2
11.0	6	5.0	5 47 23.9	18 11 47.8
11.0	6	6.0	5 45 40.1	18 13 31.7
11.0	6	7.0	5 43 55.8	18 15 16.2
12.0	6	.0	5 56 10.1	18 3 25.2
12.0	6	1.0	5 54 27.3	18 5 8.0
12.0	6	2.0	5 52 44.5	18 6 51.0
12.0	6	3.0	5 51 1.4	18 8 34.2

12.0	6	4.0	5 49 18.1	18 10 17.7
12.0	6	5.0	5 47 34.4	18 12 1.6
12.0	6	6.0	5 45 50.2	18 13 45.9
12.0	6	7.0	5 44 5.6	18 15 30.7
13.0	6	.0	5 56 22.3	18 3 37.6
13.0	6	1.0	5 54 39.3	18 5 20.7
13.0	6	2.0	5 52 56.2	18 7 4.0
13.0	6	3.0	5 51 12.8	18 8 47.5
13.0	6	4.0	5 49 29.2	18 10 31.3
13.0	6	5.0	5 47 45.2	18 12 15.4
13.0	6	6.0	5 46 .7	18 14 .0
13.0	6	7.0	5 44 15.8	18 15 45.1
14.0	6	.0	5 56 34.8	18 3 50.2
14.0	6	1.0	5 54 51.5	18 5 33.6
14.0	6	2.0	5 53 8.1	18 7 17.1
14.0	6	3.0	5 51 24.5	18 9 .8
14.0	6	4.0	5 49 40.6	18 10 44.9
14.0	6	5.0	5 47 56.3	18 12 29.2
14.0	6	6.0	5 46 11.6	18 14 14.0
14.0	6	7.0	5 44 26.4	18 15 59.3

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
15.0	6	.0	5 56 47.3			18 4 2.9		
15.0	6	1.0	5 55 3.8			18 5 46.5		
15.0	6	2.0	5 53 20.2			18 7 30.2		
15.0	6	3.0	5 51 36.4			18 9 14.2		
15.0	6	4.0	5 49 52.3			18 10 58.4		
15.0	6	5.0	5 48 7.8			18 12 43.0		
15.0	6	6.0	5 46 22.8			18 14 28.0		
15.0	6	7.0	5 44 37.4			18 16 13.5		
16.0	6	.0	5 57 .0			18 4 15.7		
16.0	6	1.0	5 55 16.3			18 5 59.5		
16.0	6	2.0	5 53 32.5			18 7 43.4		
16.0	6	3.0	5 51 48.5			18 9 27.5		
16.0	6	4.0	5 50 4.2			18 11 11.9		
16.0	6	5.0	5 48 19.5			18 12 56.6		
16.0	6	6.0	5 46 34.4			18 14 41.8		
16.0	6	7.0	5 44 48.8			18 16 27.5		
17.0	6	.0	5 57 12.8			18 4 28.6		
17.0	6	1.0	5 55 29.0			18 6 12.5		
17.0	6	2.0	5 53 45.0			18 7 56.5		
17.0	6	3.0	5 52 .8			18 9 40.8		
17.0	6	4.0	5 50 16.3			18 11 25.3		
17.0	6	5.0	5 48 31.5			18 13 10.2		
17.0	6	6.0	5 46 46.2			18 14 55.5		
17.0	6	7.0	5 45 .5			18 16 41.4		

18.0	6	.0	5 57 25.7	18 4 41.5
18.0	6	1.0	5 55 41.7	18 6 25.5
18.0	6	2.0	5 53 57.6	18 8 9.7
18.0	6	3.0	5 52 13.3	18 9 54.0
18.0	6	4.0	5 50 28.7	18 11 38.7
18.0	6	5.0	5 48 43.8	18 13 23.7
18.0	6	6.0	5 46 58.4	18 15 9.1
18.0	6	7.0	5 45 12.5	18 16 55.0
19.0	6	.0	5 57 38.6	18 4 54.5
19.0	6	1.0	5 55 54.5	18 6 38.6
19.0	6	2.0	5 54 10.4	18 8 22.8
19.0	6	3.0	5 52 26.0	18 10 7.2
19.0	6	4.0	5 50 41.3	18 11 51.9
19.0	6	5.0	5 48 56.2	18 13 37.0
19.0	6	6.0	5 47 10.8	18 15 22.5
19.0	6	7.0	5 45 24.8	18 17 8.5
20.0	6	.0	5 57 51.5	18 5 7.5
20.0	6	1.0	5 56 7.5	18 6 51.6
20.0	6	2.0	5 54 23.2	18 8 35.8
20.0	6	3.0	5 52 38.8	18 10 20.3
20.0	6	4.0	5 50 54.0	18 12 5.0
20.0	6	5.0	5 49 9.0	18 13 50.2
20.0	6	6.0	5 47 23.4	18 15 35.7
20.0	6	7.0	5 45 37.4	18 17 21.7
21.0	6	.0	5 58 4.5	18 5 20.5
21.0	6	1.0	5 56 20.4	18 7 4.6
21.0	6	2.0	5 54 36.2	18 8 48.8
21.0	6	3.0	5 52 51.7	18 10 33.3
21.0	6	4.0	5 51 7.0	18 12 18.0
21.0	6	5.0	5 49 21.8	18 14 3.2
21.0	6	6.0	5 47 36.3	18 15 48.7
21.0	6	7.0	5 45 50.3	18 17 34.7
22.0	6	.0	5 58 17.5	18 5 33.5
22.0	6	1.0	5 56 33.4	18 7 17.5
22.0	6	2.0	5 54 49.2	18 9 1.7
22.0	6	3.0	5 53 4.8	18 10 46.2
22.0	6	4.0	5 51 20.0	18 12 30.9
22.0	6	5.0	5 49 34.9	18 14 16.0
22.0	6	6.0	5 47 49.4	18 16 1.5
22.0	6	7.0	5 46 3.4	18 17 47.5
23.0	6	.0	5 58 30.5	18 5 46.4
23.0	6	1.0	5 56 46.4	18 7 30.4
23.0	6	2.0	5 55 2.3	18 9 14.5
23.0	6	3.0	5 53 17.9	18 10 58.9
23.0	6	4.0	5 51 33.2	18 12 43.5
23.0	6	5.0	5 49 48.1	18 14 28.5
23.0	6	6.0	5 48 2.7	18 16 14.0
23.0	6	7.0	5 46 16.7	18 17 59.9

24.0	6	.0	5 58 43.4	18 5 59.3
24.0	6	1.0	5 56 59.5	18 7 43.1
24.0	6	2.0	5 55 15.4	18 9 27.2
24.0	6	3.0	5 53 31.0	18 11 11.4
24.0	6	4.0	5 51 46.4	18 12 56.0
24.0	6	5.0	5 50 1.5	18 14 40.9
24.0	6	6.0	5 48 16.1	18 16 26.2
24.0	6	7.0	5 46 30.2	18 18 12.1
25.0	6	.0	5 58 56.3	18 6 12.0
25.0	6	1.0	5 57 12.4	18 7 55.8
25.0	6	2.0	5 55 28.5	18 9 39.7
25.0	6	3.0	5 53 44.3	18 11 23.8
25.0	6	4.0	5 51 59.8	18 13 8.2
25.0	6	5.0	5 50 14.9	18 14 53.0
25.0	6	6.0	5 48 29.7	18 16 38.2
25.0	6	7.0	5 46 43.9	18 18 23.9
26.0	6	.0	5 59 9.0	18 6 24.7
26.0	6	1.0	5 57 25.3	18 8 8.3
26.0	6	2.0	5 55 41.5	18 9 52.0
26.0	6	3.0	5 53 57.5	18 11 36.0
26.0	6	4.0	5 52 13.2	18 13 20.2
26.0	6	5.0	5 50 28.5	18 15 4.8
26.0	6	6.0	5 48 43.4	18 16 49.8
26.0	6	7.0	5 46 57.7	18 18 35.3
27.0	6	.0	5 59 21.7	18 6 37.2
27.0	6	1.0	5 57 38.2	18 8 20.6
27.0	6	2.0	5 55 54.6	18 10 4.1
27.0	6	3.0	5 54 10.7	18 11 47.9
27.0	6	4.0	5 52 26.6	18 13 31.9
27.0	6	5.0	5 50 42.1	18 15 16.3
27.0	6	6.0	5 48 57.1	18 17 1.1
27.0	6	7.0	5 47 11.7	18 18 46.4
28.0	6	.0	5 59 34.2	18 6 49.6
28.0	6	1.0	5 57 50.9	18 8 32.7
28.0	6	2.0	5 56 7.5	18 10 16.0
28.0	6	3.0	5 54 23.9	18 11 59.5
28.0	6	4.0	5 52 40.0	18 13 43.3
28.0	6	5.0	5 50 55.7	18 15 27.5
28.0	6	6.0	5 49 11.0	18 17 12.1
28.0	6	7.0	5 47 25.8	18 18 57.1
29.0	6	.0	5 59 46.6	18 7 1.8
29.0	6	1.0	5 58 3.5	18 8 44.6
29.0	6	2.0	5 56 20.4	18 10 27.7
29.0	6	3.0	5 54 37.0	18 12 10.9
29.0	6	4.0	5 52 53.3	18 13 54.4
29.0	6	5.0	5 51 9.3	18 15 38.3
29.0	6	6.0	5 49 24.9	18 17 22.6
29.0	6	7.0	5 47 39.9	18 19 7.4

30.0	6	.0	5 59 58.7	18 7 13.7
30.0	6	1.0	5 58 16.0	18 8 56.3
30.0	6	2.0	5 56 33.1	18 10 39.0
30.0	6	3.0	5 54 50.0	18 12 22.0
30.0	6	4.0	5 53 6.7	18 14 5.2
30.0	6	5.0	5 51 22.9	18 15 48.7
30.0	6	6.0	5 49 38.8	18 17 32.7
30.0	6	7.0	5 47 54.1	18 19 17.2

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
1.0	7	.0	6	0	10.7	18	7	25.5
1.0	7	1.0	5	58	28.3	18	9	7.7
1.0	7	2.0	5	56	45.7	18	10	50.1
1.0	7	3.0	5	55	3.0	18	12	32.7
1.0	7	4.0	5	53	19.9	18	14	15.6
1.0	7	5.0	5	51	36.5	18	15	58.8
1.0	7	6.0	5	49	52.7	18	17	42.5
1.0	7	7.0	5	48	8.3	18	19	26.6
2.0	7	.0	6	0	22.4	18	7	37.0
2.0	7	1.0	5	58	40.4	18	9	18.8
2.0	7	2.0	5	56	58.2	18	11	.8
2.0	7	3.0	5	55	15.7	18	12	43.1
2.0	7	4.0	5	53	33.1	18	14	25.6
2.0	7	5.0	5	51	50.0	18	16	8.4
2.0	7	6.0	5	50	6.5	18	17	51.7
2.0	7	7.0	5	48	22.6	18	19	35.5
3.0	7	.0	6	0	33.9	18	7	48.2
3.0	7	1.0	5	58	52.2	18	9	29.6
3.0	7	2.0	5	57	10.4	18	11	11.2
3.0	7	3.0	5	55	28.4	18	12	53.1
3.0	7	4.0	5	53	46.1	18	14	35.2
3.0	7	5.0	5	52	3.4	18	16	17.6
3.0	7	6.0	5	50	20.3	18	18	.5
3.0	7	7.0	5	48	36.8	18	19	43.9
4.0	7	.0	6	0	45.0	18	7	59.1
4.0	7	1.0	5	59	3.8	18	9	40.1
4.0	7	2.0	5	57	22.4	18	11	21.3
4.0	7	3.0	5	55	40.8	18	13	2.7
4.0	7	4.0	5	53	58.9	18	14	44.3
4.0	7	5.0	5	52	16.7	18	16	26.3
4.0	7	6.0	5	50	34.0	18	18	8.8
4.0	7	7.0	5	48	50.9	18	19	51.7
5.0	7	.0	6	0	55.9	18	8	9.6
5.0	7	1.0	5	59	15.1	18	9	50.2
5.0	7	2.0	5	57	34.2	18	11	30.9
5.0	7	3.0	5	55	53.0	18	13	11.8
5.0	7	4.0	5	54	11.6	18	14	53.0



5.0	7	5.0	5 52	29.8	18 16	34.5
5.0	7	6.0	5 50	47.6	18 18	16.5
5.0	7	7.0	5 49	4.9	18 19	58.9
6.0	7	.0	6 1	6.4	18 8	19.8
6.0	7	1.0	5 59	26.1	18 9	59.9
6.0	7	2.0	5 57	45.6	18 11	40.1
6.0	7	3.0	5 56	5.0	18 13	20.5
6.0	7	4.0	5 54	24.0	18 15	1.2
6.0	7	5.0	5 52	42.7	18 16	42.2
6.0	7	6.0	5 51	1.0	18 18	23.7
6.0	7	7.0	5 49	18.8	18 20	5.6
7.0	7	.0	6 1	16.6	18 8	29.7
7.0	7	1.0	5 59	36.8	18 10	9.2
7.0	7	2.0	5 57	56.8	18 11	48.9
7.0	7	3.0	5 56	16.7	18 13	28.7
7.0	7	4.0	5 54	36.2	18 15	8.9
7.0	7	5.0	5 52	55.5	18 16	49.4
7.0	7	6.0	5 51	14.3	18 18	30.3
7.0	7	7.0	5 49	32.6	18 20	11.7
8.0	7	.0	6 1	26.3	18 8	39.1
8.0	7	1.0	5 59	47.1	18 10	18.0
8.0	7	2.0	5 58	7.7	18 11	57.1
8.0	7	3.0	5 56	28.1	18 13	36.5
8.0	7	4.0	5 54	48.2	18 15	16.1
8.0	7	5.0	5 53	8.0	18 16	56.0
8.0	7	6.0	5 51	27.3	18 18	36.3
8.0	7	7.0	5 49	46.2	18 20	17.2
9.0	7	.0	6 1	35.7	18 8	48.1
9.0	7	1.0	5 59	57.0	18 10	26.4
9.0	7	2.0	5 58	18.2	18 12	5.0
9.0	7	3.0	5 56	39.2	18 13	43.7
9.0	7	4.0	5 54	59.9	18 15	22.7
9.0	7	5.0	5 53	20.2	18 17	2.0
9.0	7	6.0	5 51	40.2	18 18	41.8
9.0	7	7.0	5 49	59.7	18 20	22.0
10.0	7	.0	6 1	44.6	18 8	56.6
10.0	7	1.0	6 0	6.6	18 10	34.4
10.0	7	2.0	5 58	28.3	18 12	12.3
10.0	7	3.0	5 56	49.9	18 13	50.4
10.0	7	4.0	5 55	11.2	18 15	28.7
10.0	7	5.0	5 53	32.2	18 17	7.4
10.0	7	6.0	5 51	52.8	18 18	46.6
10.0	7	7.0	5 50	12.9	18 20	26.1
11.0	7	.0	6 1	53.1	18 9	4.7
11.0	7	1.0	6 0	15.7	18 10	41.8
11.0	7	2.0	5 58	38.1	18 12	19.0
11.0	7	3.0	5 57	.3	18 13	56.5
11.0	7	4.0	5 55	22.3	18 15	34.2

11.0	7	5.0	5 53	43.9	18 17	12.3
11.0	7	6.0	5 52	5.1	18 18	50.7
11.0	7	7.0	5 50	25.8	18 20	29.6
12.0	7	.0	6 2	1.2	18 9	12.3
12.0	7	1.0	6 0	24.4	18 10	48.7
12.0	7	2.0	5 58	47.5	18 12	25.3
12.0	7	3.0	5 57	10.4	18 14	2.1
12.0	7	4.0	5 55	33.0	18 15	39.1
12.0	7	5.0	5 53	55.3	18 17	16.5
12.0	7	6.0	5 52	17.2	18 18	54.2
12.0	7	7.0	5 50	38.6	18 20	32.5
13.0	7	.0	6 2	8.7	18 9	19.4
13.0	7	1.0	6 0	32.7	18 10	55.2
13.0	7	2.0	5 58	56.4	18 12	31.0
13.0	7	3.0	5 57	20.0	18 14	7.1
13.0	7	4.0	5 55	43.4	18 15	43.4
13.0	7	5.0	5 54	6.3	18 17	20.0
13.0	7	6.0	5 52	28.9	18 18	57.1
13.0	7	7.0	5 50	51.1	18 20	34.6
14.0	7	.0	6 2	15.8	18 9	26.1
14.0	7	1.0	6 0	40.5	18 11	1.0
14.0	7	2.0	5 59	5.0	18 12	36.2
14.0	7	3.0	5 57	29.3	18 14	11.5
14.0	7	4.0	5 55	53.3	18 15	47.1
14.0	7	5.0	5 54	17.1	18 17	23.0
14.0	7	6.0	5 52	40.4	18 18	59.3
14.0	7	7.0	5 51	3.2	18 20	36.0

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
			MATAHARI			MATAHARI		
H	B	~	j	m	s	j	m	s
15.0	7	.0	6 2	22.4	18 9	32.2		
15.0	7	1.0	6 0	47.8	18 11	6.4		
15.0	7	2.0	5 59	13.1	18 12	40.8		
15.0	7	3.0	5 57	38.2	18 14	15.3		
15.0	7	4.0	5 56	3.0	18 15	50.1		
15.0	7	5.0	5 54	27.4	18 17	25.2		
15.0	7	6.0	5 52	51.5	18 19	.8		
15.0	7	7.0	5 51	15.1	18 20	36.7		
16.0	7	.0	6 2	28.5	18 9	37.8		
16.0	7	1.0	6 0	54.7	18 11	11.2		
16.0	7	2.0	5 59	20.7	18 12	44.8		
16.0	7	3.0	5 57	46.6	18 14	18.5		
16.0	7	4.0	5 56	12.2	18 15	52.5		
16.0	7	5.0	5 54	37.4	18 17	26.9		
16.0	7	6.0	5 53	2.3	18 19	1.6		
16.0	7	7.0	5 51	26.7	18 20	36.8		
17.0	7	.0	6 2	34.1	18 9	42.9		

17.0	7	1.0	6	1	1.1	18	11	15.5
17.0	7	2.0	5	59	27.9	18	12	48.2
17.0	7	3.0	5	57	54.6	18	14	21.2
17.0	7	4.0	5	56	21.0	18	15	54.3
17.0	7	5.0	5	54	47.1	18	17	27.8
17.0	7	6.0	5	53	12.8	18	19	1.7
17.0	7	7.0	5	51	38.0	18	20	36.1
18.0	7	.0	6	2	39.2	18	9	47.5
18.0	7	1.0	6	1	7.0	18	11	19.2
18.0	7	2.0	5	59	34.7	18	12	51.1
18.0	7	3.0	5	58	2.2	18	14	23.2
18.0	7	4.0	5	56	29.4	18	15	55.5
18.0	7	5.0	5	54	56.3	18	17	28.2
18.0	7	6.0	5	53	22.9	18	19	1.2
18.0	7	7.0	5	51	49.0	18	20	34.7
19.0	7	.0	6	2	43.7	18	9	51.5
19.0	7	1.0	6	1	12.4	18	11	22.4
19.0	7	2.0	5	59	40.9	18	12	53.4
19.0	7	3.0	5	58	9.3	18	14	24.6
19.0	7	4.0	5	56	37.4	18	15	56.0
19.0	7	5.0	5	55	5.2	18	17	27.8
19.0	7	6.0	5	53	32.6	18	18	59.9
19.0	7	7.0	5	51	59.6	18	20	32.5
20.0	7	.0	6	2	47.7	18	9	55.0
20.0	7	1.0	6	1	17.3	18	11	25.0
20.0	7	2.0	5	59	46.7	18	12	55.1
20.0	7	3.0	5	58	16.0	18	14	25.4
20.0	7	4.0	5	56	45.0	18	15	55.9
20.0	7	5.0	5	55	13.7	18	17	26.8
20.0	7	6.0	5	53	42.0	18	18	58.0
20.0	7	7.0	5	52	9.8	18	20	29.7
21.0	7	.0	6	2	51.2	18	9	57.9
21.0	7	1.0	6	1	21.7	18	11	27.0
21.0	7	2.0	5	59	52.0	18	12	56.2
21.0	7	3.0	5	58	22.2	18	14	25.5
21.0	7	4.0	5	56	52.1	18	15	55.1
21.0	7	5.0	5	55	21.7	18	17	25.1
21.0	7	6.0	5	53	50.9	18	18	55.4
21.0	7	7.0	5	52	19.7	18	20	26.1
22.0	7	.0	6	2	54.1	18	10	.3
22.0	7	1.0	6	1	25.5	18	11	28.4
22.0	7	2.0	5	59	56.8	18	12	56.6
22.0	7	3.0	5	58	27.9	18	14	25.0
22.0	7	4.0	5	56	58.8	18	15	53.7
22.0	7	5.0	5	55	29.3	18	17	22.7
22.0	7	6.0	5	53	59.5	18	18	52.0
22.0	7	7.0	5	52	29.3	18	20	21.8
23.0	7	.0	6	2	56.5	18	10	2.1

23.0	7	1.0	6	1	28.9	18	11	29.2
23.0	7	2.0	6	0	1.1	18	12	56.5
23.0	7	3.0	5	58	33.2	18	14	23.9
23.0	7	4.0	5	57	5.0	18	15	51.6
23.0	7	5.0	5	55	36.5	18	17	19.6
23.0	7	6.0	5	54	7.7	18	18	48.0
23.0	7	7.0	5	52	38.4	18	20	16.7
24.0	7	.0	6	2	58.3	18	10	3.4
24.0	7	1.0	6	1	31.7	18	11	29.5
24.0	7	2.0	6	0	4.9	18	12	55.8
24.0	7	3.0	5	58	38.0	18	14	22.2
24.0	7	4.0	5	57	10.8	18	15	48.9
24.0	7	5.0	5	55	43.3	18	17	15.9
24.0	7	6.0	5	54	15.4	18	18	43.2
24.0	7	7.0	5	52	47.2	18	20	10.9
25.0	7	.0	6	2	59.5	18	10	4.1
25.0	7	1.0	6	1	33.9	18	11	29.2
25.0	7	2.0	6	0	8.2	18	12	54.4
25.0	7	3.0	5	58	42.2	18	14	19.8
25.0	7	4.0	5	57	16.1	18	15	45.5
25.0	7	5.0	5	55	49.6	18	17	11.4
25.0	7	6.0	5	54	22.8	18	18	37.7
25.0	7	7.0	5	52	55.5	18	20	4.4
26.0	7	.0	6	3	.2	18	10	4.2
26.0	7	1.0	6	1	35.6	18	11	28.2
26.0	7	2.0	6	0	10.9	18	12	52.4
26.0	7	3.0	5	58	46.0	18	14	16.8
26.0	7	4.0	5	57	20.9	18	15	41.4
26.0	7	5.0	5	55	55.5	18	17	6.3
26.0	7	6.0	5	54	29.7	18	18	31.5
26.0	7	7.0	5	53	3.5	18	19	57.2
27.0	7	.0	6	3	.3	18	10	3.7
27.0	7	1.0	6	1	36.8	18	11	26.7
27.0	7	2.0	6	0	13.1	18	12	49.8
27.0	7	3.0	5	58	49.3	18	14	13.1
27.0	7	4.0	5	57	25.2	18	15	36.6
27.0	7	5.0	5	56	.9	18	17	.4
27.0	7	6.0	5	54	36.1	18	18	24.6
27.0	7	7.0	5	53	11.0	18	19	49.2
28.0	7	.0	6	2	59.8	18	10	2.6
28.0	7	1.0	6	1	37.4	18	11	24.5
28.0	7	2.0	6	0	14.8	18	12	46.5
28.0	7	3.0	5	58	52.0	18	14	8.8
28.0	7	4.0	5	57	29.1	18	15	31.2
28.0	7	5.0	5	56	5.8	18	16	53.9
28.0	7	6.0	5	54	42.2	18	18	17.0
28.0	7	7.0	5	53	18.1	18	19	40.5
29.0	7	.0	6	2	58.8	18	10	1.0

29.0	7	1.0	6	1	37.4	18	11	21.8
29.0	7	2.0	6	0	15.9	18	12	42.7
29.0	7	3.0	5	58	54.3	18	14	3.8
29.0	7	4.0	5	57	32.4	18	15	25.1
29.0	7	5.0	5	56	10.2	18	16	46.7
29.0	7	6.0	5	54	47.7	18	18	8.7
29.0	7	7.0	5	53	24.8	18	19	31.0

30.0	7	.0	6	2	57.1	18	9	58.7
30.0	7	1.0	6	1	36.9	18	11	18.4
30.0	7	2.0	6	0	16.5	18	12	38.2
30.0	7	3.0	5	58	56.0	18	13	58.1
30.0	7	4.0	5	57	35.2	18	15	18.3
30.0	7	5.0	5	56	14.2	18	16	38.8
30.0	7	6.0	5	54	52.8	18	17	59.6
30.0	7	7.0	5	53	31.0	18	19	20.8

31.0	7	.0	6	2	54.9	18	9	55.9
31.0	7	1.0	6	1	35.8	18	11	14.4
31.0	7	2.0	6	0	16.5	18	12	33.0
31.0	7	3.0	5	58	57.2	18	13	51.8
31.0	7	4.0	5	57	37.5	18	15	10.9
31.0	7	5.0	5	56	17.6	18	16	30.2
31.0	7	6.0	5	54	57.4	18	17	49.8
31.0	7	7.0	5	53	36.8	18	19	9.9

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s

1.0	8	.0	6	2	52.0	18	9	52.4
1.0	8	1.0	6	1	34.1	18	11	9.8
1.0	8	2.0	6	0	16.0	18	12	27.2
1.0	8	3.0	5	58	57.8	18	13	44.9
1.0	8	4.0	5	57	39.3	18	15	2.7
1.0	8	5.0	5	56	20.6	18	16	20.9
1.0	8	6.0	5	55	1.5	18	17	39.3
1.0	8	7.0	5	53	42.1	18	18	58.2

2.0	8	.0	6	2	48.6	18	9	48.3
2.0	8	1.0	6	1	31.8	18	11	4.5
2.0	8	2.0	6	0	14.9	18	12	20.8
2.0	8	3.0	5	58	57.9	18	13	37.2
2.0	8	4.0	5	57	40.6	18	14	53.9
2.0	8	5.0	5	56	23.0	18	16	10.9
2.0	8	6.0	5	55	5.2	18	17	28.1
2.0	8	7.0	5	53	47.0	18	18	45.7

3.0	8	.0	6	2	44.5	18	9	43.7
3.0	8	1.0	6	1	28.9	18	10	58.6
3.0	8	2.0	6	0	13.2	18	12	13.7
3.0	8	3.0	5	58	57.4	18	13	28.9
3.0	8	4.0	5	57	41.3	18	14	44.4
3.0	8	5.0	5	56	25.0	18	16	.1

3.0	8	6.0	5 55	8.3	18 17	16.2
3.0	8	7.0	5 53	51.3	18 18	32.6
4.0	8	.0	6 2	39.8	18 9	38.4
4.0	8	1.0	6 1	25.4	18 10	52.1
4.0	8	2.0	6 0	11.0	18 12	6.0
4.0	8	3.0	5 58	56.3	18 13	20.0
4.0	8	4.0	5 57	41.5	18 14	34.2
4.0	8	5.0	5 56	26.4	18 15	48.7
4.0	8	6.0	5 55	11.0	18 17	3.5
4.0	8	7.0	5 53	55.2	18 18	18.6
5.0	8	.0	6 2	34.5	18 9	32.4
5.0	8	1.0	6 1	21.4	18 10	44.9
5.0	8	2.0	6 0	8.1	18 11	57.6
5.0	8	3.0	5 58	54.7	18 13	10.3
5.0	8	4.0	5 57	41.1	18 14	23.3
5.0	8	5.0	5 56	27.2	18 15	36.5
5.0	8	6.0	5 55	13.1	18 16	50.1
5.0	8	7.0	5 53	58.5	18 18	4.0
6.0	8	.0	6 2	28.5	18 9	25.9
6.0	8	1.0	6 1	16.7	18 10	37.1
6.0	8	2.0	6 0	4.7	18 11	48.5
6.0	8	3.0	5 58	52.5	18 13	.0
6.0	8	4.0	5 57	40.2	18 14	11.7
6.0	8	5.0	5 56	27.6	18 15	23.7
6.0	8	6.0	5 55	14.7	18 16	36.0
6.0	8	7.0	5 54	1.4	18 17	48.6
7.0	8	.0	6 2	22.0	18 9	18.8
7.0	8	1.0	6 1	11.4	18 10	28.7
7.0	8	2.0	6 0	.7	18 11	38.8
7.0	8	3.0	5 58	49.8	18 12	49.0
7.0	8	4.0	5 57	38.7	18 13	59.5
7.0	8	5.0	5 56	27.4	18 15	10.1
7.0	8	6.0	5 55	15.8	18 16	21.1
7.0	8	7.0	5 54	3.8	18 17	32.4
8.0	8	.0	6 2	14.8	18 9	11.0
8.0	8	1.0	6 1	5.5	18 10	19.7
8.0	8	2.0	5 59	56.1	18 11	28.4
8.0	8	3.0	5 58	46.5	18 12	37.4
8.0	8	4.0	5 57	36.7	18 13	46.5
8.0	8	5.0	5 56	26.7	18 14	55.9
8.0	8	6.0	5 55	16.3	18 16	5.6
8.0	8	7.0	5 54	5.7	18 17	15.6
9.0	8	.0	6 2	7.0	18 9	2.6
9.0	8	1.0	6 0	59.0	18 10	10.0
9.0	8	2.0	5 59	50.9	18 11	17.5
9.0	8	3.0	5 58	42.6	18 12	25.1
9.0	8	4.0	5 57	34.1	18 13	32.9
9.0	8	5.0	5 56	25.4	18 14	41.0

9.0	8	6.0	5	55	16.4	18	15	49.3
9.0	8	7.0	5	54	7.0	18	16	58.0
10.0	8	.0	6	1	58.7	18	8	53.7
10.0	8	1.0	6	0	52.0	18	9	59.7
10.0	8	2.0	5	59	45.1	18	11	5.8
10.0	8	3.0	5	58	38.2	18	12	12.2
10.0	8	4.0	5	57	31.0	18	13	18.6
10.0	8	5.0	5	56	23.6	18	14	25.4
10.0	8	6.0	5	55	15.9	18	15	32.4
10.0	8	7.0	5	54	7.9	18	16	39.7
11.0	8	.0	6	1	49.7	18	8	44.1
11.0	8	1.0	6	0	44.3	18	9	48.8
11.0	8	2.0	5	59	38.8	18	10	53.6
11.0	8	3.0	5	58	33.2	18	11	58.6
11.0	8	4.0	5	57	27.4	18	13	3.7
11.0	8	5.0	5	56	21.3	18	14	9.1
11.0	8	6.0	5	55	15.0	18	15	14.8
11.0	8	7.0	5	54	8.3	18	16	20.8
12.0	8	.0	6	1	40.1	18	8	34.0
12.0	8	1.0	6	0	36.1	18	9	37.3
12.0	8	2.0	5	59	32.0	18	10	40.8
12.0	8	3.0	5	58	27.7	18	11	44.4
12.0	8	4.0	5	57	23.2	18	12	48.2
12.0	8	5.0	5	56	18.5	18	13	52.2
12.0	8	6.0	5	55	13.5	18	14	56.5
12.0	8	7.0	5	54	8.2	18	16	1.1
13.0	8	.0	6	1	30.0	18	8	23.3
13.0	8	1.0	6	0	27.3	18	9	25.3
13.0	8	2.0	5	59	24.6	18	10	27.4
13.0	8	3.0	5	58	21.6	18	11	29.6
13.0	8	4.0	5	57	18.5	18	12	32.0
13.0	8	5.0	5	56	15.2	18	13	34.7
13.0	8	6.0	5	55	11.6	18	14	37.6
13.0	8	7.0	5	54	7.6	18	15	40.8
14.0	8	.0	6	1	19.3	18	8	12.0
14.0	8	1.0	6	0	18.0	18	9	12.6
14.0	8	2.0	5	59	16.6	18	10	13.3
14.0	8	3.0	5	58	15.1	18	11	14.2
14.0	8	4.0	5	57	13.3	18	12	15.2
14.0	8	5.0	5	56	11.4	18	13	16.5
14.0	8	6.0	5	55	9.1	18	14	18.0
14.0	8	7.0	5	54	6.6	18	15	19.9

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
15.0	8	.0	6	1	8.1	18	8	.2
15.0	8	1.0	6	0	8.2	18	8	59.4

15.0	8	2.0	5 59	8.1	18 9	58.8
15.0	8	3.0	5 58	8.0	18 10	58.2
15.0	8	4.0	5 57	7.6	18 11	57.9
15.0	8	5.0	5 56	7.1	18 12	57.7
15.0	8	6.0	5 55	6.2	18 13	57.9
15.0	8	7.0	5 54	5.1	18 14	58.3
16.0	8	.0	6 0	56.3	18 7	47.9
16.0	8	1.0	5 59	57.8	18 8	45.7
16.0	8	2.0	5 58	59.2	18 9	43.6
16.0	8	3.0	5 58	.4	18 10	41.7
16.0	8	4.0	5 57	1.5	18 11	39.9
16.0	8	5.0	5 56	2.3	18 12	38.4
16.0	8	6.0	5 55	2.9	18 13	37.1
16.0	8	7.0	5 54	3.2	18 14	36.1
17.0	8	.0	6 0	44.0	18 7	35.0
17.0	8	1.0	5 59	46.9	18 8	31.4
17.0	8	2.0	5 58	49.7	18 9	27.9
17.0	8	3.0	5 57	52.3	18 10	24.6
17.0	8	4.0	5 56	54.8	18 11	21.4
17.0	8	5.0	5 55	57.1	18 12	18.4
17.0	8	6.0	5 54	59.1	18 13	15.7
17.0	8	7.0	5 54	.8	18 14	13.3
18.0	8	.0	6 0	31.2	18 7	21.7
18.0	8	1.0	5 59	35.5	18 8	16.7
18.0	8	2.0	5 58	39.7	18 9	11.7
18.0	8	3.0	5 57	43.8	18 10	7.0
18.0	8	4.0	5 56	47.7	18 11	2.3
18.0	8	5.0	5 55	51.4	18 11	57.9
18.0	8	6.0	5 54	54.8	18 12	53.8
18.0	8	7.0	5 53	58.0	18 13	49.9
19.0	8	.0	6 0	17.9	18 7	7.9
19.0	8	1.0	5 59	23.6	18 8	1.4
19.0	8	2.0	5 58	29.3	18 8	55.0
19.0	8	3.0	5 57	34.8	18 9	48.8
19.0	8	4.0	5 56	40.1	18 10	42.7
19.0	8	5.0	5 55	45.3	18 11	36.9
19.0	8	6.0	5 54	50.2	18 12	31.3
19.0	8	7.0	5 53	54.8	18 13	25.9
20.0	8	.0	6 0	4.1	18 6	53.5
20.0	8	1.0	5 59	11.3	18 7	45.6
20.0	8	2.0	5 58	18.4	18 8	37.8
20.0	8	3.0	5 57	25.3	18 9	30.1
20.0	8	4.0	5 56	32.1	18 10	22.6
20.0	8	5.0	5 55	38.7	18 11	15.3
20.0	8	6.0	5 54	45.1	18 12	8.2
20.0	8	7.0	5 53	51.2	18 13	1.4
21.0	8	.0	5 59	49.9	18 6	38.8
21.0	8	1.0	5 58	58.5	18 7	29.4



21.0	8	2.0	5 58	7.0	18 8	20.1
21.0	8	3.0	5 57	15.4	18 9	11.0
21.0	8	4.0	5 56	23.7	18 10	2.0
21.0	8	5.0	5 55	31.7	18 10	53.2
21.0	8	6.0	5 54	39.6	18 11	44.7
21.0	8	7.0	5 53	47.1	18 12	36.4
22.0	8	.0	5 59	35.1	18 6	23.6
22.0	8	1.0	5 58	45.2	18 7	12.7
22.0	8	2.0	5 57	55.3	18 8	2.0
22.0	8	3.0	5 57	5.1	18 8	51.4
22.0	8	4.0	5 56	14.8	18 9	40.9
22.0	8	5.0	5 55	24.4	18 10	30.6
22.0	8	6.0	5 54	33.7	18 11	20.6
22.0	8	7.0	5 53	42.7	18 12	10.8
23.0	8	.0	5 59	20.0	18 6	7.9
23.0	8	1.0	5 58	31.6	18 6	55.6
23.0	8	2.0	5 57	43.0	18 7	43.4
23.0	8	3.0	5 56	54.4	18 8	31.3
23.0	8	4.0	5 56	5.6	18 9	19.3
23.0	8	5.0	5 55	16.6	18 10	7.6
23.0	8	6.0	5 54	27.4	18 10	56.0
23.0	8	7.0	5 53	38.0	18 11	44.7
24.0	8	.0	5 59	4.4	18 5	51.9
24.0	8	1.0	5 58	17.5	18 6	38.1
24.0	8	2.0	5 57	30.4	18 7	24.3
24.0	8	3.0	5 56	43.3	18 8	10.8
24.0	8	4.0	5 55	56.0	18 8	57.3
24.0	8	5.0	5 55	8.5	18 9	44.1
24.0	8	6.0	5 54	20.8	18 10	31.0
24.0	8	7.0	5 53	32.8	18 11	18.2
25.0	8	.0	5 58	48.4	18 5	35.4
25.0	8	1.0	5 58	3.0	18 6	20.1
25.0	8	2.0	5 57	17.4	18 7	4.9
25.0	8	3.0	5 56	31.8	18 7	49.8
25.0	8	4.0	5 55	46.0	18 8	34.9
25.0	8	5.0	5 54	60.0	18 9	20.1
25.0	8	6.0	5 54	13.8	18 10	5.5
25.0	8	7.0	5 53	27.3	18 10	51.2
26.0	8	.0	5 58	32.0	18 5	18.6
26.0	8	1.0	5 57	48.1	18 6	1.7
26.0	8	2.0	5 57	4.0	18 6	45.0
26.0	8	3.0	5 56	19.9	18 7	28.4
26.0	8	4.0	5 55	35.6	18 8	12.0
26.0	8	5.0	5 54	51.1	18 8	55.7
26.0	8	6.0	5 54	6.4	18 9	39.6
26.0	8	7.0	5 53	21.5	18 10	23.7
27.0	8	.0	5 58	15.2	18 5	1.3
27.0	8	1.0	5 57	32.8	18 5	43.0

27.0	8	2.0	5 56 50.3	18 6 24.8
27.0	8	3.0	5 56 7.7	18 7 6.7
27.0	8	4.0	5 55 24.9	18 7 48.7
27.0	8	5.0	5 54 41.9	18 8 30.9
27.0	8	6.0	5 53 58.8	18 9 13.3
27.0	8	7.0	5 53 15.4	18 9 55.9
28.0	8	.0	5 57 58.1	18 4 43.8
28.0	8	1.0	5 57 17.2	18 5 23.9
28.0	8	2.0	5 56 36.2	18 6 4.1
28.0	8	3.0	5 55 55.1	18 6 44.5
28.0	8	4.0	5 55 13.8	18 7 25.0
28.0	8	5.0	5 54 32.4	18 8 5.6
28.0	8	6.0	5 53 50.8	18 8 46.5
28.0	8	7.0	5 53 8.9	18 9 27.6
29.0	8	.0	5 57 40.6	18 4 25.8
29.0	8	1.0	5 57 1.2	18 5 4.4
29.0	8	2.0	5 56 21.7	18 5 43.2
29.0	8	3.0	5 55 42.1	18 6 22.0
29.0	8	4.0	5 55 2.4	18 7 .9
29.0	8	5.0	5 54 22.5	18 7 40.0
29.0	8	6.0	5 53 42.4	18 8 19.3
29.0	8	7.0	5 53 2.2	18 8 58.9
30.0	8	.0	5 57 22.7	18 4 7.6
30.0	8	1.0	5 56 44.9	18 4 44.6
30.0	8	2.0	5 56 6.9	18 5 21.8
30.0	8	3.0	5 55 28.9	18 5 59.1
30.0	8	4.0	5 54 50.7	18 6 36.5
30.0	8	5.0	5 54 12.3	18 7 14.1
30.0	8	6.0	5 53 33.8	18 7 51.8
30.0	8	7.0	5 52 55.1	18 8 29.8
31.0	8	.0	5 57 4.5	18 3 49.0
31.0	8	1.0	5 56 28.2	18 4 24.5
31.0	8	2.0	5 55 51.8	18 5 .1
31.0	8	3.0	5 55 15.3	18 5 35.8
31.0	8	4.0	5 54 38.7	18 6 11.7
31.0	8	5.0	5 54 1.9	18 6 47.7
31.0	8	6.0	5 53 24.9	18 7 23.9
31.0	8	7.0	5 52 47.7	18 8 .3

TARIKH      LATITUD      WAKTU TERBIT      WAKTU TERBENAM  
MATAHARI      MATAHARI  
H    B      ~      j    m    s      j    m    s

1.0	9	.0	5 56 46.0	18 3 30.0
1.0	9	1.0	5 56 11.2	18 4 4.0
1.0	9	2.0	5 55 36.4	18 4 38.1
1.0	9	3.0	5 55 1.4	18 5 12.3
1.0	9	4.0	5 54 26.3	18 5 46.6
1.0	9	5.0	5 53 51.1	18 6 21.0
1.0	9	6.0	5 53 15.7	18 6 55.6

1.0	9	7.0	5 52 40.1	18 7 30.4
2.0	9	.0	5 56 27.1	18 3 10.8
2.0	9	1.0	5 55 53.9	18 3 43.2
2.0	9	2.0	5 55 20.6	18 4 15.8
2.0	9	3.0	5 54 47.2	18 4 48.4
2.0	9	4.0	5 54 13.7	18 5 21.1
2.0	9	5.0	5 53 40.0	18 5 54.0
2.0	9	6.0	5 53 6.2	18 6 27.0
2.0	9	7.0	5 52 32.2	18 7 .3
3.0	9	.0	5 56 7.9	18 2 51.3
3.0	9	1.0	5 55 36.3	18 3 22.2
3.0	9	2.0	5 55 4.6	18 3 53.1
3.0	9	3.0	5 54 32.7	18 4 24.2
3.0	9	4.0	5 54 .8	18 4 55.3
3.0	9	5.0	5 53 28.7	18 5 26.6
3.0	9	6.0	5 52 56.4	18 5 58.1
3.0	9	7.0	5 52 24.0	18 6 29.7
4.0	9	.0	5 55 48.5	18 2 31.5
4.0	9	1.0	5 55 18.4	18 3 .8
4.0	9	2.0	5 54 48.2	18 3 30.2
4.0	9	3.0	5 54 18.0	18 3 59.7
4.0	9	4.0	5 53 47.6	18 4 29.2
4.0	9	5.0	5 53 17.1	18 4 59.0
4.0	9	6.0	5 52 46.4	18 5 28.8
4.0	9	7.0	5 52 15.6	18 5 58.9
5.0	9	.0	5 55 28.8	18 2 11.5
5.0	9	1.0	5 55 .2	18 2 39.2
5.0	9	2.0	5 54 31.7	18 3 7.0
5.0	9	3.0	5 54 3.0	18 3 34.9
5.0	9	4.0	5 53 34.2	18 4 2.9
5.0	9	5.0	5 53 5.3	18 4 31.0
5.0	9	6.0	5 52 36.2	18 4 59.3
5.0	9	7.0	5 52 6.9	18 5 27.8
6.0	9	.0	5 55 8.8	18 1 51.2
6.0	9	1.0	5 54 41.8	18 2 17.3
6.0	9	2.0	5 54 14.8	18 2 43.5
6.0	9	3.0	5 53 47.7	18 3 9.9
6.0	9	4.0	5 53 20.5	18 3 36.3
6.0	9	5.0	5 52 53.2	18 4 2.8
6.0	9	6.0	5 52 25.7	18 4 29.5
6.0	9	7.0	5 51 58.0	18 4 56.4
7.0	9	.0	5 54 48.5	18 1 30.7
7.0	9	1.0	5 54 23.2	18 1 55.2
7.0	9	2.0	5 53 57.8	18 2 19.9
7.0	9	3.0	5 53 32.3	18 2 44.6
7.0	9	4.0	5 53 6.6	18 3 9.4
7.0	9	5.0	5 52 40.9	18 3 34.4
7.0	9	6.0	5 52 15.0	18 3 59.4

7.0	9	7.0	5 51	49.0	18	4	24.7
8.0	9	.0	5 54	28.1	18	1	10.0
8.0	9	1.0	5 54	4.3	18	1	32.9
8.0	9	2.0	5 53	40.5	18	1	56.0
8.0	9	3.0	5 53	16.6	18	2	19.1
8.0	9	4.0	5 52	52.5	18	2	42.3
8.0	9	5.0	5 52	28.4	18	3	5.7
8.0	9	6.0	5 52	4.1	18	3	29.1
8.0	9	7.0	5 51	39.7	18	3	52.8
9.0	9	.0	5 54	7.4	18	0	49.1
9.0	9	1.0	5 53	45.3	18	1	10.4
9.0	9	2.0	5 53	23.0	18	1	31.9
9.0	9	3.0	5 53	.7	18	1	53.4
9.0	9	4.0	5 52	38.3	18	2	15.0
9.0	9	5.0	5 52	15.7	18	2	36.8
9.0	9	6.0	5 51	53.1	18	2	58.6
9.0	9	7.0	5 51	30.2	18	3	20.7
10.0	9	.0	5 53	46.6	18	0	28.0
10.0	9	1.0	5 53	26.0	18	0	47.8
10.0	9	2.0	5 53	5.4	18	1	7.6
10.0	9	3.0	5 52	44.7	18	1	27.5
10.0	9	4.0	5 52	23.8	18	1	47.6
10.0	9	5.0	5 52	2.9	18	2	7.7
10.0	9	6.0	5 51	41.8	18	2	28.0
10.0	9	7.0	5 51	20.6	18	2	48.4
11.0	9	.0	5 53	25.6	18	0	6.8
11.0	9	1.0	5 53	6.7	18	0	25.0
11.0	9	2.0	5 52	47.6	18	0	43.2
11.0	9	3.0	5 52	28.5	18	1	1.5
11.0	9	4.0	5 52	9.3	18	1	19.9
11.0	9	5.0	5 51	49.9	18	1	38.5
11.0	9	6.0	5 51	30.5	18	1	57.1
11.0	9	7.0	5 51	10.9	18	2	15.9
12.0	9	.0	5 53	4.5	17	59	45.5
12.0	9	1.0	5 52	47.1	18	0	2.1
12.0	9	2.0	5 52	29.7	18	0	18.7
12.0	9	3.0	5 52	12.2	18	0	35.4
12.0	9	4.0	5 51	54.6	18	0	52.2
12.0	9	5.0	5 51	36.9	18	1	9.1
12.0	9	6.0	5 51	19.0	18	1	26.1
12.0	9	7.0	5 51	1.1	18	1	43.3
13.0	9	.0	5 52	43.3	17	59	24.1
13.0	9	1.0	5 52	27.5	17	59	39.0
13.0	9	2.0	5 52	11.7	17	59	54.0
13.0	9	3.0	5 51	55.8	18	0	9.1
13.0	9	4.0	5 51	39.8	18	0	24.3
13.0	9	5.0	5 51	23.7	18	0	39.6
13.0	9	6.0	5 51	7.5	18	0	55.0

13.0	9	7.0	5 50 51.2	18 1 10.5
14.0	9	.0	5 52 21.9	17 59 2.6
14.0	9	1.0	5 52 7.8	17 59 15.9
14.0	9	2.0	5 51 53.6	17 59 29.3
14.0	9	3.0	5 51 39.3	17 59 42.8
14.0	9	4.0	5 51 24.9	17 59 56.4
14.0	9	5.0	5 51 10.5	18 0 10.0
14.0	9	6.0	5 50 55.9	18 0 23.8
14.0	9	7.0	5 50 41.2	18 0 37.7

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
15.0	9	.0	5 52		.5	17 58		41.1
15.0	9	1.0	5 51		48.0	17 58		52.8
15.0	9	2.0	5 51		35.4	17 59		4.6
15.0	9	3.0	5 51		22.8	17 59		16.4
15.0	9	4.0	5 51		10.0	17 59		28.4
15.0	9	5.0	5 50		57.2	17 59		40.4
15.0	9	6.0	5 50		44.2	17 59		52.5
15.0	9	7.0	5 50		31.1	18 0		4.8
16.0	9	.0	5 51		39.1	17 58		19.5
16.0	9	1.0	5 51		28.2	17 58		29.6
16.0	9	2.0	5 51		17.2	17 58		39.8
16.0	9	3.0	5 51		6.2	17 58		50.0
16.0	9	4.0	5 50		55.0	17 59		.3
16.0	9	5.0	5 50		43.8	17 59		10.7
16.0	9	6.0	5 50		32.5	17 59		21.2
16.0	9	7.0	5 50		21.1	17 59		31.8
17.0	9	.0	5 51		17.6	17 57		57.9
17.0	9	1.0	5 51		8.4	17 58		6.4
17.0	9	2.0	5 50		59.0	17 58		14.9
17.0	9	3.0	5 50		49.6	17 58		23.6
17.0	9	4.0	5 50		40.1	17 58		32.3
17.0	9	5.0	5 50		30.5	17 58		41.0
17.0	9	6.0	5 50		20.8	17 58		49.9
17.0	9	7.0	5 50		11.0	17 58		58.9
18.0	9	.0	5 50		56.2	17 57		36.4
18.0	9	1.0	5 50		48.5	17 57		43.2
18.0	9	2.0	5 50		40.8	17 57		50.1
18.0	9	3.0	5 50		33.0	17 57		57.1
18.0	9	4.0	5 50		25.1	17 58		4.2
18.0	9	5.0	5 50		17.1	17 58		11.3
18.0	9	6.0	5 50		9.1	17 58		18.6
18.0	9	7.0	5 50		1.0	17 58		25.9
19.0	9	.0	5 50		34.7	17 57		14.9
19.0	9	1.0	5 50		28.7	17 57		20.1
19.0	9	2.0	5 50		22.6	17 57		25.4

19.0	9	3.0	5 50 16.4	17 57 30.7
19.0	9	4.0	5 50 10.2	17 57 36.2
19.0	9	5.0	5 50 3.8	17 57 41.7
19.0	9	6.0	5 49 57.4	17 57 47.3
19.0	9	7.0	5 49 50.9	17 57 52.9
20.0	9	.0	5 50 13.3	17 56 53.4
20.0	9	1.0	5 50 8.9	17 56 57.0
20.0	9	2.0	5 50 4.5	17 57 .7
20.0	9	3.0	5 49 59.9	17 57 4.4
20.0	9	4.0	5 49 55.3	17 57 8.2
20.0	9	5.0	5 49 50.6	17 57 12.1
20.0	9	6.0	5 49 45.8	17 57 16.0
20.0	9	7.0	5 49 41.0	17 57 20.0
21.0	9	.0	5 49 52.0	17 56 32.0
21.0	9	1.0	5 49 49.2	17 56 34.0
21.0	9	2.0	5 49 46.4	17 56 36.1
21.0	9	3.0	5 49 43.5	17 56 38.2
21.0	9	4.0	5 49 40.5	17 56 40.3
21.0	9	5.0	5 49 37.4	17 56 42.6
21.0	9	6.0	5 49 34.3	17 56 44.9
21.0	9	7.0	5 49 31.1	17 56 47.2
22.0	9	.0	5 49 30.8	17 56 10.8
22.0	9	1.0	5 49 29.6	17 56 11.1
22.0	9	2.0	5 49 28.4	17 56 11.5
22.0	9	3.0	5 49 27.1	17 56 12.0
22.0	9	4.0	5 49 25.8	17 56 12.5
22.0	9	5.0	5 49 24.4	17 56 13.1
22.0	9	6.0	5 49 22.9	17 56 13.8
22.0	9	7.0	5 49 21.3	17 56 14.5
23.0	9	.0	5 49 9.6	17 55 49.7
23.0	9	1.0	5 49 10.1	17 55 48.4
23.0	9	2.0	5 49 10.5	17 55 47.1
23.0	9	3.0	5 49 10.9	17 55 46.0
23.0	9	4.0	5 49 11.2	17 55 44.9
23.0	9	5.0	5 49 11.4	17 55 43.8
23.0	9	6.0	5 49 11.6	17 55 42.8
23.0	9	7.0	5 49 11.7	17 55 41.9
24.0	9	.0	5 48 48.6	17 55 28.7
24.0	9	1.0	5 48 50.7	17 55 25.8
24.0	9	2.0	5 48 52.8	17 55 22.9
24.0	9	3.0	5 48 54.8	17 55 20.1
24.0	9	4.0	5 48 56.7	17 55 17.4
24.0	9	5.0	5 48 58.6	17 55 14.7
24.0	9	6.0	5 49 .4	17 55 12.0
24.0	9	7.0	5 49 2.1	17 55 9.4
25.0	9	.0	5 48 27.8	17 55 7.9
25.0	9	1.0	5 48 31.5	17 55 3.3
25.0	9	2.0	5 48 35.2	17 54 58.8

25.0	9	3.0	5 48 38.8	17 54 54.4
25.0	9	4.0	5 48 42.4	17 54 50.0
25.0	9	5.0	5 48 45.9	17 54 45.7
25.0	9	6.0	5 48 49.4	17 54 41.4
25.0	9	7.0	5 48 52.8	17 54 37.1
26.0	9	.0	5 48 7.1	17 54 47.2
26.0	9	1.0	5 48 12.5	17 54 41.0
26.0	9	2.0	5 48 17.8	17 54 34.9
26.0	9	3.0	5 48 23.0	17 54 28.9
26.0	9	4.0	5 48 28.2	17 54 22.8
26.0	9	5.0	5 48 33.4	17 54 16.9
26.0	9	6.0	5 48 38.5	17 54 10.9
26.0	9	7.0	5 48 43.6	17 54 5.0
27.0	9	.0	5 47 46.6	17 54 26.8
27.0	9	1.0	5 47 53.6	17 54 19.0
27.0	9	2.0	5 48 .5	17 54 11.2
27.0	9	3.0	5 48 7.4	17 54 3.5
27.0	9	4.0	5 48 14.3	17 53 55.9
27.0	9	5.0	5 48 21.1	17 53 48.2
27.0	9	6.0	5 48 27.8	17 53 40.7
27.0	9	7.0	5 48 34.5	17 53 33.1
28.0	9	.0	5 47 26.3	17 54 6.6
28.0	9	1.0	5 47 34.9	17 53 57.1
28.0	9	2.0	5 47 43.5	17 53 47.8
28.0	9	3.0	5 47 52.0	17 53 38.4
28.0	9	4.0	5 48 .5	17 53 29.1
28.0	9	5.0	5 48 9.0	17 53 19.9
28.0	9	6.0	5 48 17.4	17 53 10.6
28.0	9	7.0	5 48 25.7	17 53 1.4
29.0	9	.0	5 47 6.2	17 53 46.6
29.0	9	1.0	5 47 16.5	17 53 35.5
29.0	9	2.0	5 47 26.7	17 53 24.5
29.0	9	3.0	5 47 36.9	17 53 13.5
29.0	9	4.0	5 47 47.0	17 53 2.6
29.0	9	5.0	5 47 57.0	17 52 51.7
29.0	9	6.0	5 48 7.1	17 52 40.8
29.0	9	7.0	5 48 17.1	17 52 30.0
30.0	9	.0	5 46 46.4	17 53 26.9
30.0	9	1.0	5 46 58.3	17 53 14.2
30.0	9	2.0	5 47 10.1	17 53 1.5
30.0	9	3.0	5 47 21.9	17 52 48.9
30.0	9	4.0	5 47 33.6	17 52 36.3
30.0	9	5.0	5 47 45.4	17 52 23.8
30.0	9	6.0	5 47 57.1	17 52 11.3
30.0	9	7.0	5 48 8.7	17 51 58.8

TARIKH LATITUD WAKTU TERBIT WAKTU TERBENAM  
MATAHARI MATAHARI  
H B ~ j m s j m s

1.0	10	.0	5 46 26.8	17 53 7.4
1.0	10	1.0	5 46 40.3	17 52 53.1
1.0	10	2.0	5 46 53.8	17 52 38.8
1.0	10	3.0	5 47 7.2	17 52 24.6
1.0	10	4.0	5 47 20.6	17 52 10.4
1.0	10	5.0	5 47 33.9	17 51 56.2
1.0	10	6.0	5 47 47.3	17 51 42.0
1.0	10	7.0	5 48 .6	17 51 27.9
2.0	10	.0	5 46 7.4	17 52 48.3
2.0	10	1.0	5 46 22.6	17 52 32.3
2.0	10	2.0	5 46 37.7	17 52 16.4
2.0	10	3.0	5 46 52.7	17 52 .5
2.0	10	4.0	5 47 7.8	17 51 44.7
2.0	10	5.0	5 47 22.8	17 51 28.8
2.0	10	6.0	5 47 37.7	17 51 13.0
2.0	10	7.0	5 47 52.7	17 50 57.2
3.0	10	.0	5 45 48.4	17 52 29.4
3.0	10	1.0	5 46 5.1	17 52 11.8
3.0	10	2.0	5 46 21.9	17 51 54.2
3.0	10	3.0	5 46 38.6	17 51 36.7
3.0	10	4.0	5 46 55.2	17 51 19.3
3.0	10	5.0	5 47 11.8	17 51 1.8
3.0	10	6.0	5 47 28.5	17 50 44.4
3.0	10	7.0	5 47 45.1	17 50 26.9
4.0	10	.0	5 45 29.6	17 52 10.8
4.0	10	1.0	5 45 48.0	17 51 51.6
4.0	10	2.0	5 46 6.4	17 51 32.4
4.0	10	3.0	5 46 24.7	17 51 13.3
4.0	10	4.0	5 46 43.0	17 50 54.2
4.0	10	5.0	5 47 1.2	17 50 35.1
4.0	10	6.0	5 47 19.5	17 50 16.0
4.0	10	7.0	5 47 37.8	17 49 56.9
5.0	10	.0	5 45 11.1	17 51 52.6
5.0	10	1.0	5 45 31.2	17 51 31.8
5.0	10	2.0	5 45 51.2	17 51 11.0
5.0	10	3.0	5 46 11.1	17 50 50.2
5.0	10	4.0	5 46 31.0	17 50 29.5
5.0	10	5.0	5 46 50.9	17 50 8.7
5.0	10	6.0	5 47 10.8	17 49 48.0
5.0	10	7.0	5 47 30.7	17 49 27.3
6.0	10	.0	5 44 53.0	17 51 34.7
6.0	10	1.0	5 45 14.7	17 51 12.3
6.0	10	2.0	5 45 36.3	17 50 49.8
6.0	10	3.0	5 45 57.9	17 50 27.5
6.0	10	4.0	5 46 19.4	17 50 5.1
6.0	10	5.0	5 46 40.9	17 49 42.8
6.0	10	6.0	5 47 2.5	17 49 20.4
6.0	10	7.0	5 47 24.0	17 48 58.0



7.0	10	.0	5 44 35.3	17 51 17.2
7.0	10	1.0	5 44 58.6	17 50 53.2
7.0	10	2.0	5 45 21.8	17 50 29.1
7.0	10	3.0	5 45 45.0	17 50 5.1
7.0	10	4.0	5 46 8.1	17 49 41.1
7.0	10	5.0	5 46 31.3	17 49 17.2
7.0	10	6.0	5 46 54.5	17 48 53.2
7.0	10	7.0	5 47 17.7	17 48 29.2
8.0	10	.0	5 44 17.9	17 51 .1
8.0	10	1.0	5 44 42.8	17 50 34.4
8.0	10	2.0	5 45 7.6	17 50 8.8
8.0	10	3.0	5 45 32.4	17 49 43.2
8.0	10	4.0	5 45 57.2	17 49 17.6
8.0	10	5.0	5 46 22.0	17 48 52.0
8.0	10	6.0	5 46 46.8	17 48 26.4
8.0	10	7.0	5 47 11.7	17 48 .7
9.0	10	.0	5 44 .9	17 50 43.5
9.0	10	1.0	5 44 27.4	17 50 16.2
9.0	10	2.0	5 44 53.9	17 49 48.9
9.0	10	3.0	5 45 20.3	17 49 21.7
9.0	10	4.0	5 45 46.7	17 48 54.5
9.0	10	5.0	5 46 13.1	17 48 27.2
9.0	10	6.0	5 46 39.6	17 47 60.0
9.0	10	7.0	5 47 6.0	17 47 32.7
10.0	10	.0	5 43 44.4	17 50 27.2
10.0	10	1.0	5 44 12.5	17 49 58.3
10.0	10	2.0	5 44 40.6	17 49 29.4
10.0	10	3.0	5 45 8.6	17 49 .6
10.0	10	4.0	5 45 36.6	17 48 31.8
10.0	10	5.0	5 46 4.7	17 48 2.9
10.0	10	6.0	5 46 32.7	17 47 34.1
10.0	10	7.0	5 47 .8	17 47 5.2
11.0	10	.0	5 43 28.3	17 50 11.5
11.0	10	1.0	5 43 58.0	17 49 40.9
11.0	10	2.0	5 44 27.7	17 49 10.5
11.0	10	3.0	5 44 57.3	17 48 40.0
11.0	10	4.0	5 45 27.0	17 48 9.6
11.0	10	5.0	5 45 56.6	17 47 39.1
11.0	10	6.0	5 46 26.3	17 47 8.7
11.0	10	7.0	5 46 56.0	17 46 38.1
12.0	10	.0	5 43 12.7	17 49 56.2
12.0	10	1.0	5 43 44.0	17 49 24.0
12.0	10	2.0	5 44 15.3	17 48 52.0
12.0	10	3.0	5 44 46.5	17 48 19.9
12.0	10	4.0	5 45 17.7	17 47 47.9
12.0	10	5.0	5 45 49.0	17 47 15.8
12.0	10	6.0	5 46 20.3	17 46 43.7
12.0	10	7.0	5 46 51.6	17 46 11.6

13.0	10	.0	5 42 57.5	17 49 41.4
13.0	10	1.0	5 43 30.4	17 49 7.7
13.0	10	2.0	5 44 3.3	17 48 34.0
13.0	10	3.0	5 44 36.2	17 48 .4
13.0	10	4.0	5 45 9.0	17 47 26.7
13.0	10	5.0	5 45 41.9	17 46 53.1
13.0	10	6.0	5 46 14.8	17 46 19.4
13.0	10	7.0	5 46 47.7	17 45 45.6

14.0	10	.0	5 42 42.9	17 49 27.1
14.0	10	1.0	5 43 17.4	17 48 51.8
14.0	10	2.0	5 43 51.9	17 48 16.6
14.0	10	3.0	5 44 26.3	17 47 41.3
14.0	10	4.0	5 45 .7	17 47 6.1
14.0	10	5.0	5 45 35.2	17 46 30.8
14.0	10	6.0	5 46 9.7	17 45 55.5
14.0	10	7.0	5 46 44.3	17 45 20.2

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s

15.0	10	.0	5 42 28.8	17 49 13.4
15.0	10	1.0	5 43 4.9	17 48 36.5
15.0	10	2.0	5 43 40.9	17 47 59.7
15.0	10	3.0	5 44 17.0	17 47 22.9
15.0	10	4.0	5 44 53.0	17 46 46.1
15.0	10	5.0	5 45 29.0	17 46 9.2
15.0	10	6.0	5 46 5.1	17 45 32.3
15.0	10	7.0	5 46 41.3	17 44 55.3

16.0	10	.0	5 42 15.3	17 49 .3
16.0	10	1.0	5 42 52.9	17 48 21.8
16.0	10	2.0	5 43 30.5	17 47 43.4
16.0	10	3.0	5 44 8.2	17 47 5.0
16.0	10	4.0	5 44 45.8	17 46 26.6
16.0	10	5.0	5 45 23.4	17 45 48.2
16.0	10	6.0	5 46 1.1	17 45 9.7
16.0	10	7.0	5 46 38.9	17 44 31.1

17.0	10	.0	5 42 2.3	17 48 47.7
17.0	10	1.0	5 42 41.5	17 48 7.7
17.0	10	2.0	5 43 20.7	17 47 27.7
17.0	10	3.0	5 43 59.9	17 46 47.7
17.0	10	4.0	5 44 39.1	17 46 7.7
17.0	10	5.0	5 45 18.3	17 45 27.7
17.0	10	6.0	5 45 57.6	17 44 47.6
17.0	10	7.0	5 46 37.0	17 44 7.5

18.0	10	.0	5 41 49.9	17 48 35.8
18.0	10	1.0	5 42 30.7	17 47 54.2
18.0	10	2.0	5 43 11.5	17 47 12.6
18.0	10	3.0	5 43 52.2	17 46 31.1

18.0	10	4.0	5 44	33.0	17 45	49.5
18.0	10	5.0	5 45	13.8	17 45	7.9
18.0	10	6.0	5 45	54.7	17 44	26.3
18.0	10	7.0	5 46	35.6	17 43	44.5
19.0	10	.0	5 41	38.1	17 48	24.4
19.0	10	1.0	5 42	20.5	17 47	41.3
19.0	10	2.0	5 43	2.8	17 46	58.2
19.0	10	3.0	5 43	45.2	17 46	15.1
19.0	10	4.0	5 44	27.5	17 45	32.0
19.0	10	5.0	5 45	9.9	17 44	48.8
19.0	10	6.0	5 45	52.3	17 44	5.6
19.0	10	7.0	5 46	34.8	17 43	22.3
20.0	10	.0	5 41	27.0	17 48	13.8
20.0	10	1.0	5 42	10.9	17 47	29.1
20.0	10	2.0	5 42	54.8	17 46	44.4
20.0	10	3.0	5 43	38.7	17 45	59.8
20.0	10	4.0	5 44	22.6	17 45	15.1
20.0	10	5.0	5 45	6.5	17 44	30.4
20.0	10	6.0	5 45	50.5	17 43	45.6
20.0	10	7.0	5 46	34.6	17 43	.7
21.0	10	.0	5 41	16.5	17 48	3.8
21.0	10	1.0	5 42	2.0	17 47	17.5
21.0	10	2.0	5 42	47.4	17 46	31.3
21.0	10	3.0	5 43	32.9	17 45	45.1
21.0	10	4.0	5 44	18.3	17 44	58.9
21.0	10	5.0	5 45	3.8	17 44	12.6
21.0	10	6.0	5 45	49.4	17 43	26.3
21.0	10	7.0	5 46	35.0	17 42	39.8
22.0	10	.0	5 41	6.7	17 47	54.4
22.0	10	1.0	5 41	53.7	17 47	6.7
22.0	10	2.0	5 42	40.7	17 46	18.9
22.0	10	3.0	5 43	27.7	17 45	31.2
22.0	10	4.0	5 44	14.7	17 44	43.4
22.0	10	5.0	5 45	1.7	17 43	55.6
22.0	10	6.0	5 45	48.8	17 43	7.7
22.0	10	7.0	5 46	36.1	17 42	19.7
23.0	10	.0	5 40	57.6	17 47	45.8
23.0	10	1.0	5 41	46.1	17 46	56.5
23.0	10	2.0	5 42	34.6	17 46	7.2
23.0	10	3.0	5 43	23.1	17 45	18.0
23.0	10	4.0	5 44	11.7	17 44	28.7
23.0	10	5.0	5 45	.2	17 43	39.3
23.0	10	6.0	5 45	48.9	17 42	49.9
23.0	10	7.0	5 46	37.7	17 42	.3
24.0	10	.0	5 40	49.1	17 47	37.9
24.0	10	1.0	5 41	39.2	17 46	47.1
24.0	10	2.0	5 42	29.2	17 45	56.3
24.0	10	3.0	5 43	19.3	17 45	5.5

24.0	10	4.0	5 44	9.3	17 44	14.7
24.0	10	5.0	5 44	59.4	17 43	23.8
24.0	10	6.0	5 45	49.7	17 42	32.8
24.0	10	7.0	5 46	40.0	17 41	41.7
25.0	10	.0	5 40	41.4	17 47	30.7
25.0	10	1.0	5 41	33.0	17 46	38.4
25.0	10	2.0	5 42	24.6	17 45	46.1
25.0	10	3.0	5 43	16.1	17 44	53.8
25.0	10	4.0	5 44	7.7	17 44	1.4
25.0	10	5.0	5 44	59.3	17 43	9.0
25.0	10	6.0	5 45	51.1	17 42	16.5
25.0	10	7.0	5 46	42.9	17 41	23.9
26.0	10	.0	5 40	34.4	17 47	24.3
26.0	10	1.0	5 41	27.5	17 46	30.4
26.0	10	2.0	5 42	20.6	17 45	36.6
26.0	10	3.0	5 43	13.6	17 44	42.8
26.0	10	4.0	5 44	6.7	17 43	49.0
26.0	10	5.0	5 44	59.9	17 42	55.1
26.0	10	6.0	5 45	53.1	17 42	1.1
26.0	10	7.0	5 46	46.5	17 41	6.9
27.0	10	.0	5 40	28.2	17 47	18.5
27.0	10	1.0	5 41	22.8	17 46	23.2
27.0	10	2.0	5 42	17.3	17 45	27.9
27.0	10	3.0	5 43	11.8	17 44	32.6
27.0	10	4.0	5 44	6.4	17 43	37.3
27.0	10	5.0	5 45	1.1	17 42	41.9
27.0	10	6.0	5 45	55.9	17 41	46.4
27.0	10	7.0	5 46	50.8	17 40	50.7
28.0	10	.0	5 40	22.7	17 47	13.6
28.0	10	1.0	5 41	18.7	17 46	16.8
28.0	10	2.0	5 42	14.7	17 45	20.0
28.0	10	3.0	5 43	10.8	17 44	23.2
28.0	10	4.0	5 44	6.9	17 43	26.4
28.0	10	5.0	5 45	3.0	17 42	29.5
28.0	10	6.0	5 45	59.3	17 41	32.5
28.0	10	7.0	5 46	55.7	17 40	35.4
29.0	10	.0	5 40	17.9	17 47	9.4
29.0	10	1.0	5 41	15.4	17 46	11.1
29.0	10	2.0	5 42	12.9	17 45	12.9
29.0	10	3.0	5 43	10.4	17 44	14.6
29.0	10	4.0	5 44	8.0	17 43	16.3
29.0	10	5.0	5 45	5.6	17 42	18.0
29.0	10	6.0	5 46	3.4	17 41	19.5
29.0	10	7.0	5 47	1.3	17 40	20.9
30.0	10	.0	5 40	13.9	17 47	5.9
30.0	10	1.0	5 41	12.9	17 46	6.2
30.0	10	2.0	5 42	11.8	17 45	6.5
30.0	10	3.0	5 43	10.8	17 44	6.8

30.0	10	4.0	5 44	9.8	17 43	7.1
30.0	10	5.0	5 45	8.9	17 42	7.2
30.0	10	6.0	5 46	8.1	17 41	7.3
30.0	10	7.0	5 47	7.5	17 40	7.2
31.0	10	.0	5 40	10.6	17 47	3.3
31.0	10	1.0	5 41	11.1	17 46	2.1
31.0	10	2.0	5 42	11.5	17 45	1.0
31.0	10	3.0	5 43	11.9	17 43	59.8
31.0	10	4.0	5 44	12.4	17 42	58.6
31.0	10	5.0	5 45	12.9	17 41	57.3
31.0	10	6.0	5 46	13.6	17 40	55.9
31.0	10	7.0	5 47	14.4	17 39	54.4

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
1.0	11	.0	5 40	8.1		17 47	1.4	
1.0	11	1.0	5 41	10.0		17 45	58.8	
1.0	11	2.0	5 42	11.9		17 44	56.2	
1.0	11	3.0	5 43	13.7		17 43	53.6	
1.0	11	4.0	5 44	15.6		17 42	51.0	
1.0	11	5.0	5 45	17.6		17 41	48.3	
1.0	11	6.0	5 46	19.8		17 40	45.4	
1.0	11	7.0	5 47	22.1		17 39	42.4	
2.0	11	.0	5 40	6.4		17 47	.3	
2.0	11	1.0	5 41	9.7		17 45	56.3	
2.0	11	2.0	5 42	13.0		17 44	52.3	
2.0	11	3.0	5 43	16.3		17 43	48.3	
2.0	11	4.0	5 44	19.6		17 42	44.2	
2.0	11	5.0	5 45	23.1		17 41	40.1	
2.0	11	6.0	5 46	26.6		17 40	35.8	
2.0	11	7.0	5 47	30.4		17 39	31.4	
3.0	11	.0	5 40	5.5		17 46	59.9	
3.0	11	1.0	5 41	10.2		17 45	54.5	
3.0	11	2.0	5 42	14.9		17 44	49.2	
3.0	11	3.0	5 43	19.6		17 43	43.8	
3.0	11	4.0	5 44	24.3		17 42	38.3	
3.0	11	5.0	5 45	29.2		17 41	32.8	
3.0	11	6.0	5 46	34.2		17 40	27.1	
3.0	11	7.0	5 47	39.3		17 39	21.2	
4.0	11	.0	5 40	5.4		17 47	.4	
4.0	11	1.0	5 41	11.5		17 45	53.6	
4.0	11	2.0	5 42	17.6		17 44	46.9	
4.0	11	3.0	5 43	23.6		17 43	40.1	
4.0	11	4.0	5 44	29.8		17 42	33.2	
4.0	11	5.0	5 45	36.0		17 41	26.3	
4.0	11	6.0	5 46	42.4		17 40	19.2	
4.0	11	7.0	5 47	49.0		17 39	11.9	

5.0	11	.0	5 40	6.0	17 47	1.7
5.0	11	1.0	5 41	13.5	17 45	53.6
5.0	11	2.0	5 42	21.0	17 44	45.4
5.0	11	3.0	5 43	28.5	17 43	37.2
5.0	11	4.0	5 44	36.0	17 42	29.0
5.0	11	5.0	5 45	43.6	17 41	20.7
5.0	11	6.0	5 46	51.4	17 40	12.2
5.0	11	7.0	5 47	59.4	17 39	3.6
6.0	11	.0	5 40	7.5	17 47	3.8
6.0	11	1.0	5 41	16.4	17 45	54.3
6.0	11	2.0	5 42	25.2	17 44	44.8
6.0	11	3.0	5 43	34.0	17 43	35.3
6.0	11	4.0	5 44	42.9	17 42	25.7
6.0	11	5.0	5 45	51.9	17 41	16.0
6.0	11	6.0	5 47	1.1	17 40	6.2
6.0	11	7.0	5 48	10.5	17 38	56.1
7.0	11	.0	5 40	9.8	17 47	6.7
7.0	11	1.0	5 41	20.0	17 45	55.9
7.0	11	2.0	5 42	30.2	17 44	45.0
7.0	11	3.0	5 43	40.4	17 43	34.2
7.0	11	4.0	5 44	50.6	17 42	23.3
7.0	11	5.0	5 46	1.0	17 41	12.2
7.0	11	6.0	5 47	11.5	17 40	1.0
7.0	11	7.0	5 48	22.2	17 38	49.6
8.0	11	.0	5 40	12.9	17 47	10.5
8.0	11	1.0	5 41	24.5	17 45	58.3
8.0	11	2.0	5 42	36.0	17 44	46.1
8.0	11	3.0	5 43	47.5	17 43	34.0
8.0	11	4.0	5 44	59.1	17 42	21.7
8.0	11	5.0	5 46	10.8	17 41	9.3
8.0	11	6.0	5 47	22.6	17 39	56.8
8.0	11	7.0	5 48	34.7	17 38	44.1
9.0	11	.0	5 40	16.9	17 47	15.1
9.0	11	1.0	5 41	29.7	17 46	1.6
9.0	11	2.0	5 42	42.5	17 44	48.1
9.0	11	3.0	5 43	55.4	17 43	34.6
9.0	11	4.0	5 45	8.3	17 42	21.1
9.0	11	5.0	5 46	21.3	17 41	7.4
9.0	11	6.0	5 47	34.5	17 39	53.5
9.0	11	7.0	5 48	47.9	17 38	39.5
10.0	11	.0	5 40	21.7	17 47	20.5
10.0	11	1.0	5 41	35.8	17 46	5.7
10.0	11	2.0	5 42	49.9	17 44	51.0
10.0	11	3.0	5 44	4.1	17 43	36.2
10.0	11	4.0	5 45	18.3	17 42	21.3
10.0	11	5.0	5 46	32.6	17 41	6.4
10.0	11	6.0	5 47	47.1	17 39	51.2
10.0	11	7.0	5 49	1.8	17 38	35.9

11.0	11	.0	5 40 27.3	17 47 26.8
11.0	11	1.0	5 41 42.7	17 46 10.7
11.0	11	2.0	5 42 58.1	17 44 54.7
11.0	11	3.0	5 44 13.5	17 43 38.6
11.0	11	4.0	5 45 29.0	17 42 22.5
11.0	11	5.0	5 46 44.6	17 41 6.3
11.0	11	6.0	5 48 .4	17 39 49.9
11.0	11	7.0	5 49 16.4	17 38 33.2

12.0	11	.0	5 40 33.8	17 47 33.9
12.0	11	1.0	5 41 50.4	17 46 16.6
12.0	11	2.0	5 43 7.1	17 44 59.3
12.0	11	3.0	5 44 23.8	17 43 42.0
12.0	11	4.0	5 45 40.5	17 42 24.6
12.0	11	5.0	5 46 57.4	17 41 7.1
12.0	11	6.0	5 48 14.4	17 39 49.4
12.0	11	7.0	5 49 31.7	17 38 31.5

13.0	11	.0	5 40 41.1	17 47 41.8
13.0	11	1.0	5 41 59.0	17 46 23.3
13.0	11	2.0	5 43 16.9	17 45 4.8
13.0	11	3.0	5 44 34.8	17 43 46.3
13.0	11	4.0	5 45 52.8	17 42 27.7
13.0	11	5.0	5 47 10.9	17 41 8.9
13.0	11	6.0	5 48 29.2	17 39 50.0
13.0	11	7.0	5 49 47.7	17 38 30.9

14.0	11	.0	5 40 49.3	17 47 50.6
14.0	11	1.0	5 42 8.4	17 46 30.9
14.0	11	2.0	5 43 27.5	17 45 11.2
14.0	11	3.0	5 44 46.6	17 43 51.4
14.0	11	4.0	5 46 5.8	17 42 31.6
14.0	11	5.0	5 47 25.2	17 41 11.7
14.0	11	6.0	5 48 44.7	17 39 51.5
14.0	11	7.0	5 50 4.5	17 38 31.2

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s

15.0	11	.0	5 40 58.3	17 48 .3
15.0	11	1.0	5 42 18.6	17 46 39.4
15.0	11	2.0	5 43 38.9	17 45 18.5
15.0	11	3.0	5 44 59.2	17 43 57.5
15.0	11	4.0	5 46 19.7	17 42 36.5
15.0	11	5.0	5 47 40.2	17 41 15.4
15.0	11	6.0	5 49 .9	17 39 54.1
15.0	11	7.0	5 50 21.9	17 38 32.5

16.0	11	.0	5 41 8.2	17 48 10.8
16.0	11	1.0	5 42 29.7	17 46 48.7
16.0	11	2.0	5 43 51.1	17 45 26.6
16.0	11	3.0	5 45 12.6	17 44 4.6
16.0	11	4.0	5 46 34.2	17 42 42.4

16.0	11	5.0	5 47	56.0	17 41	20.1
16.0	11	6.0	5 49	17.9	17 39	57.6
16.0	11	7.0	5 50	40.1	17 38	34.8
17.0	11	.0	5 41	18.9	17 48	22.1
17.0	11	1.0	5 42	41.6	17 46	58.9
17.0	11	2.0	5 44	4.2	17 45	35.7
17.0	11	3.0	5 45	26.8	17 44	12.5
17.0	11	4.0	5 46	49.6	17 42	49.2
17.0	11	5.0	5 48	12.5	17 41	25.7
17.0	11	6.0	5 49	35.6	17 40	2.1
17.0	11	7.0	5 50	58.9	17 38	38.1
18.0	11	.0	5 41	30.5	17 48	34.3
18.0	11	1.0	5 42	54.3	17 47	10.0
18.0	11	2.0	5 44	18.0	17 45	45.7
18.0	11	3.0	5 45	41.8	17 44	21.4
18.0	11	4.0	5 47	5.7	17 42	56.9
18.0	11	5.0	5 48	29.7	17 41	32.3
18.0	11	6.0	5 49	54.0	17 40	7.5
18.0	11	7.0	5 51	18.4	17 38	42.5
19.0	11	.0	5 41	43.0	17 48	47.4
19.0	11	1.0	5 43	7.8	17 47	22.0
19.0	11	2.0	5 44	32.7	17 45	56.6
19.0	11	3.0	5 45	57.6	17 44	31.1
19.0	11	4.0	5 47	22.6	17 43	5.6
19.0	11	5.0	5 48	47.7	17 41	39.9
19.0	11	6.0	5 50	13.1	17 40	14.0
19.0	11	7.0	5 51	38.7	17 38	47.9
20.0	11	.0	5 41	56.3	17 49	1.3
20.0	11	1.0	5 43	22.2	17 47	34.8
20.0	11	2.0	5 44	48.2	17 46	8.3
20.0	11	3.0	5 46	14.1	17 44	41.8
20.0	11	4.0	5 47	40.2	17 43	15.2
20.0	11	5.0	5 49	6.4	17 41	48.5
20.0	11	6.0	5 50	32.9	17 40	21.5
20.0	11	7.0	5 51	59.6	17 38	54.3
21.0	11	.0	5 42	10.4	17 49	16.0
21.0	11	1.0	5 43	37.4	17 47	48.5
21.0	11	2.0	5 45	4.4	17 46	21.0
21.0	11	3.0	5 46	31.5	17 44	53.4
21.0	11	4.0	5 47	58.6	17 43	25.8
21.0	11	5.0	5 49	25.9	17 41	58.0
21.0	11	6.0	5 50	53.4	17 40	29.9
21.0	11	7.0	5 52	21.1	17 39	1.6
22.0	11	.0	5 42	25.4	17 49	31.6
22.0	11	1.0	5 43	53.4	17 48	3.0
22.0	11	2.0	5 45	21.4	17 46	34.5
22.0	11	3.0	5 46	49.5	17 45	5.9
22.0	11	4.0	5 48	17.7	17 43	37.3



22.0	11	5.0	5 49	46.0	17 42	8.4
22.0	11	6.0	5 51	14.6	17 40	39.4
22.0	11	7.0	5 52	43.4	17 39	10.0
23.0	11	.0	5 42	41.2	17 49	48.0
23.0	11	1.0	5 44	10.2	17 48	18.4
23.0	11	2.0	5 45	39.2	17 46	48.9
23.0	11	3.0	5 47	8.3	17 45	19.3
23.0	11	4.0	5 48	37.5	17 43	49.7
23.0	11	5.0	5 50	6.8	17 42	19.8
23.0	11	6.0	5 51	36.4	17 40	49.8
23.0	11	7.0	5 53	6.2	17 39	19.4
24.0	11	.0	5 42	57.8	17 50	5.1
24.0	11	1.0	5 44	27.8	17 48	34.6
24.0	11	2.0	5 45	57.8	17 47	4.1
24.0	11	3.0	5 47	27.8	17 45	33.6
24.0	11	4.0	5 48	58.0	17 44	3.0
24.0	11	5.0	5 50	28.3	17 42	32.2
24.0	11	6.0	5 51	58.9	17 41	1.1
24.0	11	7.0	5 53	29.7	17 39	29.8
25.0	11	.0	5 43	15.1	17 50	23.1
25.0	11	1.0	5 44	46.1	17 48	51.6
25.0	11	2.0	5 46	17.1	17 47	20.2
25.0	11	3.0	5 47	48.1	17 45	48.7
25.0	11	4.0	5 49	19.2	17 44	17.2
25.0	11	5.0	5 50	50.5	17 42	45.4
25.0	11	6.0	5 52	22.0	17 41	13.5
25.0	11	7.0	5 53	53.7	17 39	41.2
26.0	11	.0	5 43	33.3	17 50	41.8
26.0	11	1.0	5 45	5.2	17 49	9.4
26.0	11	2.0	5 46	37.1	17 47	37.1
26.0	11	3.0	5 48	9.0	17 46	4.7
26.0	11	4.0	5 49	41.0	17 44	32.2
26.0	11	5.0	5 51	13.2	17 42	59.6
26.0	11	6.0	5 52	45.7	17 41	26.7
26.0	11	7.0	5 54	18.4	17 39	53.5
27.0	11	.0	5 43	52.2	17 51	1.2
27.0	11	1.0	5 45	25.0	17 49	28.0
27.0	11	2.0	5 46	57.8	17 47	54.8
27.0	11	3.0	5 48	30.6	17 46	21.5
27.0	11	4.0	5 50	3.5	17 44	48.2
27.0	11	5.0	5 51	36.6	17 43	14.6
27.0	11	6.0	5 53	9.9	17 41	40.9
27.0	11	7.0	5 54	43.6	17 40	6.8
28.0	11	.0	5 44	11.8	17 51	21.4
28.0	11	1.0	5 45	45.5	17 49	47.3
28.0	11	2.0	5 47	19.1	17 48	13.2
28.0	11	3.0	5 48	52.8	17 46	39.1
28.0	11	4.0	5 50	26.6	17 45	4.9

28.0	11	5.0	5 52 .6	17 43 30.5
28.0	11	6.0	5 53 34.8	17 41 55.9
28.0	11	7.0	5 55 9.3	17 40 21.0
29.0	11	.0	5 44 32.2	17 51 42.2
29.0	11	1.0	5 46 6.7	17 50 7.3
29.0	11	2.0	5 47 41.1	17 48 32.4
29.0	11	3.0	5 49 15.6	17 46 57.5
29.0	11	4.0	5 50 50.3	17 45 22.5
29.0	11	5.0	5 52 25.1	17 43 47.3
29.0	11	6.0	5 54 .1	17 42 11.8
29.0	11	7.0	5 55 35.4	17 40 36.1
30.0	11	.0	5 44 53.2	17 52 3.7
30.0	11	1.0	5 46 28.5	17 50 28.0
30.0	11	2.0	5 48 3.8	17 48 52.4
30.0	11	3.0	5 49 39.1	17 47 16.7
30.0	11	4.0	5 51 14.5	17 45 40.9
30.0	11	5.0	5 52 50.1	17 44 4.9
30.0	11	6.0	5 54 26.0	17 42 28.6
30.0	11	7.0	5 56 2.1	17 40 52.1

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
H	B	~	MATAHARI			MATAHARI		
			j	m	s	j	m	s
1.0	12	.0	5 45	14.9		17 52	25.9	
1.0	12	1.0	5 46	51.0		17 50	49.5	
1.0	12	2.0	5 48	27.0		17 49	13.1	
1.0	12	3.0	5 50	3.1		17 47	36.6	
1.0	12	4.0	5 51	39.3		17 46	.0	
1.0	12	5.0	5 53	15.7		17 44	23.3	
1.0	12	6.0	5 54	52.3		17 42	46.3	
1.0	12	7.0	5 56	29.2		17 41	9.0	
2.0	12	.0	5 45	37.3		17 52	48.7	
2.0	12	1.0	5 47	14.0		17 51	11.5	
2.0	12	2.0	5 48	50.8		17 49	34.4	
2.0	12	3.0	5 50	27.6		17 47	57.2	
2.0	12	4.0	5 52	4.6		17 46	19.9	
2.0	12	5.0	5 53	41.7		17 44	42.5	
2.0	12	6.0	5 55	19.1		17 43	4.7	
2.0	12	7.0	5 56	56.7		17 41	26.7	
3.0	12	.0	5 46	.2		17 53	12.1	
3.0	12	1.0	5 47	37.7		17 51	34.2	
3.0	12	2.0	5 49	15.2		17 49	56.4	
3.0	12	3.0	5 50	52.7		17 48	18.6	
3.0	12	4.0	5 52	30.4		17 46	40.6	
3.0	12	5.0	5 54	8.2		17 45	2.4	
3.0	12	6.0	5 55	46.3		17 43	24.0	
3.0	12	7.0	5 57	24.6		17 41	45.3	
4.0	12	.0	5 46	23.8		17 53	36.1	

4.0	12	1.0	5 48	1.9	17 51	57.6
4.0	12	2.0	5 49	40.1	17 50	19.1
4.0	12	3.0	5 51	18.3	17 48	40.6
4.0	12	4.0	5 52	56.6	17 47	1.9
4.0	12	5.0	5 54	35.1	17 45	23.1
4.0	12	6.0	5 56	13.9	17 43	44.0
4.0	12	7.0	5 57	52.9	17 42	4.6
5.0	12	.0	5 46	47.9	17 54	.6
5.0	12	1.0	5 48	26.7	17 52	21.5
5.0	12	2.0	5 50	5.5	17 50	42.4
5.0	12	3.0	5 51	44.3	17 49	3.3
5.0	12	4.0	5 53	23.3	17 47	24.0
5.0	12	5.0	5 55	2.4	17 45	44.5
5.0	12	6.0	5 56	41.8	17 44	4.8
5.0	12	7.0	5 58	21.5	17 42	24.8
6.0	12	.0	5 47	12.6	17 54	25.6
6.0	12	1.0	5 48	52.0	17 52	46.0
6.0	12	2.0	5 50	31.4	17 51	6.3
6.0	12	3.0	5 52	10.8	17 49	26.6
6.0	12	4.0	5 53	50.4	17 47	46.7
6.0	12	5.0	5 55	30.1	17 46	6.7
6.0	12	6.0	5 57	10.1	17 44	26.4
6.0	12	7.0	5 58	50.4	17 42	45.8
7.0	12	.0	5 47	37.8	17 54	51.2
7.0	12	1.0	5 49	17.8	17 53	11.0
7.0	12	2.0	5 50	57.7	17 51	30.8
7.0	12	3.0	5 52	37.7	17 49	50.5
7.0	12	4.0	5 54	17.9	17 48	10.1
7.0	12	5.0	5 55	58.2	17 46	29.5
7.0	12	6.0	5 57	38.7	17 44	48.6
7.0	12	7.0	5 59	19.6	17 43	7.5
8.0	12	.0	5 48	3.5	17 55	17.3
8.0	12	1.0	5 49	44.0	17 53	36.5
8.0	12	2.0	5 51	24.5	17 51	55.8
8.0	12	3.0	5 53	5.0	17 50	15.0
8.0	12	4.0	5 54	45.7	17 48	34.1
8.0	12	5.0	5 56	26.5	17 46	53.0
8.0	12	6.0	5 58	7.7	17 45	11.6
8.0	12	7.0	5 59	49.1	17 43	29.9
9.0	12	.0	5 48	29.7	17 55	43.8
9.0	12	1.0	5 50	10.7	17 54	2.5
9.0	12	2.0	5 51	51.7	17 52	21.3
9.0	12	3.0	5 53	32.7	17 50	40.1
9.0	12	4.0	5 55	13.9	17 48	58.7
9.0	12	5.0	5 56	55.2	17 47	17.1
9.0	12	6.0	5 58	36.8	17 45	35.2
9.0	12	7.0	6 0	18.8	17 43	53.1
10.0	12	.0	5 48	56.3	17 56	10.7

10.0	12	1.0	5 50	37.8	17 54	29.0
10.0	12	2.0	5 52	19.2	17 52	47.4
10.0	12	3.0	5 54	.7	17 51	5.7
10.0	12	4.0	5 55	42.3	17 49	23.8
10.0	12	5.0	5 57	24.2	17 47	41.8
10.0	12	6.0	5 59	6.2	17 45	59.5
10.0	12	7.0	6 0	48.6	17 44	16.9

11.0	12	.0	5 49	23.4	17 56	38.0
11.0	12	1.0	5 51	5.3	17 54	56.0
11.0	12	2.0	5 52	47.1	17 53	13.9
11.0	12	3.0	5 54	29.1	17 51	31.8
11.0	12	4.0	5 56	11.1	17 49	49.5
11.0	12	5.0	5 57	53.3	17 48	7.1
11.0	12	6.0	5 59	35.8	17 46	24.4
11.0	12	7.0	6 1	18.7	17 44	41.4

12.0	12	.0	5 49	50.9	17 57	5.7
12.0	12	1.0	5 51	33.1	17 55	23.3
12.0	12	2.0	5 53	15.4	17 53	40.9
12.0	12	3.0	5 54	57.7	17 51	58.4
12.0	12	4.0	5 56	40.1	17 50	15.8
12.0	12	5.0	5 58	22.7	17 48	33.0
12.0	12	6.0	6 0	5.6	17 46	49.9
12.0	12	7.0	6 1	48.8	17 45	6.5

13.0	12	.0	5 50	18.7	17 57	33.8
13.0	12	1.0	5 52	1.3	17 55	51.0
13.0	12	2.0	5 53	43.9	17 54	8.3
13.0	12	3.0	5 55	26.5	17 52	25.4
13.0	12	4.0	5 57	9.3	17 50	42.5
13.0	12	5.0	5 58	52.3	17 48	59.4
13.0	12	6.0	6 0	35.5	17 47	16.0
13.0	12	7.0	6 2	19.1	17 45	32.2

14.0	12	.0	5 50	46.9	17 58	2.2
14.0	12	1.0	5 52	29.8	17 56	19.1
14.0	12	2.0	5 54	12.7	17 54	36.1
14.0	12	3.0	5 55	55.7	17 52	52.9
14.0	12	4.0	5 57	38.7	17 51	9.7
14.0	12	5.0	5 59	22.0	17 49	26.3
14.0	12	6.0	6 1	5.6	17 47	42.6
14.0	12	7.0	6 2	49.5	17 45	58.6

TARIKH		LATITUD	WAKTU TERBIT			WAKTU TERBENAM		
			MATAHARI			MATAHARI		
H	B	~	j	m	s	j	m	s

15.0	12	.0	5 51	15.4	17 58	30.8
15.0	12	1.0	5 52	58.6	17 56	47.5
15.0	12	2.0	5 54	41.7	17 55	4.2
15.0	12	3.0	5 56	25.0	17 53	20.9
15.0	12	4.0	5 58	8.3	17 51	37.4
15.0	12	5.0	5 59	51.9	17 49	53.7

15.0	12	6.0	6	1	35.7	17	48	9.7
15.0	12	7.0	6	3	19.9	17	46	25.4
16.0	12	.0	5	51	44.2	17	58	59.8
16.0	12	1.0	5	53	27.6	17	57	16.2
16.0	12	2.0	5	55	11.0	17	55	32.7
16.0	12	3.0	5	56	54.5	17	53	49.2
16.0	12	4.0	5	58	38.1	17	52	5.5
16.0	12	5.0	6	0	21.9	17	50	21.6
16.0	12	6.0	6	2	5.9	17	48	37.4
16.0	12	7.0	6	3	50.3	17	46	52.9
17.0	12	.0	5	52	13.2	17	59	29.0
17.0	12	1.0	5	53	56.8	17	57	45.3
17.0	12	2.0	5	55	40.5	17	56	1.6
17.0	12	3.0	5	57	24.1	17	54	17.8
17.0	12	4.0	5	59	7.9	17	52	33.9
17.0	12	5.0	6	0	51.9	17	50	49.8
17.0	12	6.0	6	2	36.2	17	49	5.5
17.0	12	7.0	6	4	20.8	17	47	20.8
18.0	12	.0	5	52	42.5	17	59	58.3
18.0	12	1.0	5	54	26.3	17	58	14.5
18.0	12	2.0	5	56	10.1	17	56	30.7
18.0	12	3.0	5	57	53.9	17	54	46.8
18.0	12	4.0	5	59	37.8	17	53	2.8
18.0	12	5.0	6	1	22.0	17	51	18.5
18.0	12	6.0	6	3	6.4	17	49	34.1
18.0	12	7.0	6	4	51.2	17	47	49.2
19.0	12	.0	5	53	12.0	18	0	27.9
19.0	12	1.0	5	54	55.9	17	58	44.0
19.0	12	2.0	5	56	39.8	17	57	.0
19.0	12	3.0	5	58	23.7	17	55	16.0
19.0	12	4.0	6	0	7.8	17	53	31.9
19.0	12	5.0	6	1	52.1	17	51	47.6
19.0	12	6.0	6	3	36.6	17	50	3.0
19.0	12	7.0	6	5	21.5	17	48	18.1
20.0	12	.0	5	53	41.7	18	0	57.6
20.0	12	1.0	5	55	25.6	17	59	13.6
20.0	12	2.0	5	57	9.6	17	57	29.6
20.0	12	3.0	5	58	53.6	17	55	45.6
20.0	12	4.0	6	0	37.8	17	54	1.4
20.0	12	5.0	6	2	22.1	17	52	17.0
20.0	12	6.0	6	4	6.8	17	50	32.4
20.0	12	7.0	6	5	51.7	17	48	47.4
21.0	12	.0	5	54	11.5	18	1	27.4
21.0	12	1.0	5	55	55.5	17	59	43.4
21.0	12	2.0	5	57	39.5	17	57	59.4
21.0	12	3.0	5	59	23.6	17	56	15.3
21.0	12	4.0	6	1	7.8	17	54	31.1
21.0	12	5.0	6	2	52.1	17	52	46.7

21.0	12	6.0	6	4	36.8	17	51	2.1
21.0	12	7.0	6	6	21.8	17	49	17.0
22.0	12	.0	5	54	41.4	18	1	57.3
22.0	12	1.0	5	56	25.4	18	0	13.3
22.0	12	2.0	5	58	9.4	17	58	29.3
22.0	12	3.0	5	59	53.5	17	56	45.3
22.0	12	4.0	6	1	37.7	17	55	1.1
22.0	12	5.0	6	3	22.1	17	53	16.7
22.0	12	6.0	6	5	6.7	17	51	32.1
22.0	12	7.0	6	6	51.7	17	49	47.1
23.0	12	.0	5	55	11.3	18	2	27.3
23.0	12	1.0	5	56	55.3	18	0	43.3
23.0	12	2.0	5	58	39.3	17	58	59.4
23.0	12	3.0	6	0	23.3	17	57	15.4
23.0	12	4.0	6	2	7.5	17	55	31.2
23.0	12	5.0	6	3	51.8	17	53	46.9
23.0	12	6.0	6	5	36.5	17	52	2.3
23.0	12	7.0	6	7	21.4	17	50	17.4
24.0	12	.0	5	55	41.3	18	2	57.2
24.0	12	1.0	5	57	25.2	18	1	13.3
24.0	12	2.0	5	59	9.1	17	59	29.5
24.0	12	3.0	6	0	53.0	17	57	45.6
24.0	12	4.0	6	2	37.1	17	56	1.5
24.0	12	5.0	6	4	21.4	17	54	17.3
24.0	12	6.0	6	6	6.0	17	52	32.8
24.0	12	7.0	6	7	50.9	17	50	48.0
25.0	12	.0	5	56	11.3	18	3	27.0
25.0	12	1.0	5	57	55.0	18	1	43.3
25.0	12	2.0	5	59	38.8	17	59	59.6
25.0	12	3.0	6	1	22.7	17	58	15.9
25.0	12	4.0	6	3	6.6	17	56	32.0
25.0	12	5.0	6	4	50.8	17	54	47.9
25.0	12	6.0	6	6	35.2	17	53	3.5
25.0	12	7.0	6	8	20.0	17	51	18.8
26.0	12	.0	5	56	41.2	18	3	56.8
26.0	12	1.0	5	58	24.8	18	2	13.3
26.0	12	2.0	6	0	8.4	18	0	29.8
26.0	12	3.0	6	1	52.1	17	58	46.2
26.0	12	4.0	6	3	35.9	17	57	2.5
26.0	12	5.0	6	5	19.9	17	55	18.5
26.0	12	6.0	6	7	4.2	17	53	34.3
26.0	12	7.0	6	8	48.8	17	51	49.8
27.0	12	.0	5	57	11.0	18	4	26.5
27.0	12	1.0	5	58	54.4	18	2	43.2
27.0	12	2.0	6	0	37.8	18	0	59.9
27.0	12	3.0	6	2	21.3	17	59	16.5
27.0	12	4.0	6	4	5.0	17	57	33.0
27.0	12	5.0	6	5	48.8	17	55	49.3

27.0	12	6.0	6	7	32.9	17	54	5.3
27.0	12	7.0	6	9	17.3	17	52	21.0
28.0	12	.0	5	57	40.7	18	4	56.0
28.0	12	1.0	5	59	23.9	18	3	13.0
28.0	12	2.0	6	1	7.1	18	1	29.9
28.0	12	3.0	6	2	50.3	17	59	46.8
28.0	12	4.0	6	4	33.7	17	58	3.5
28.0	12	5.0	6	6	17.3	17	56	20.1
28.0	12	6.0	6	8	1.1	17	54	36.3
28.0	12	7.0	6	9	45.3	17	52	52.3
29.0	12	.0	5	58	10.2	18	5	25.4
29.0	12	1.0	5	59	53.1	18	3	42.6
29.0	12	2.0	6	1	36.0	18	1	59.8
29.0	12	3.0	6	3	19.0	18	0	17.0
29.0	12	4.0	6	5	2.1	17	58	34.0
29.0	12	5.0	6	6	45.5	17	56	50.8
29.0	12	6.0	6	8	29.0	17	55	7.4
29.0	12	7.0	6	10	12.9	17	53	23.6
30.0	12	.0	5	58	39.5	18	5	54.5
30.0	12	1.0	6	0	22.1	18	4	12.0
30.0	12	2.0	6	2	4.7	18	2	29.5
30.0	12	3.0	6	3	47.4	18	0	47.0
30.0	12	4.0	6	5	30.2	17	59	4.4
30.0	12	5.0	6	7	13.2	17	57	21.6
30.0	12	6.0	6	8	56.5	17	55	38.5
30.0	12	7.0	6	10	40.1	17	53	55.0
31.0	12	.0	5	59	8.5	18	6	23.3
31.0	12	1.0	6	0	50.8	18	4	41.2
31.0	12	2.0	6	2	33.1	18	2	59.1
31.0	12	3.0	6	4	15.4	18	1	17.0
31.0	12	4.0	6	5	57.9	17	59	34.7
31.0	12	5.0	6	7	40.5	17	57	52.2
31.0	12	6.0	6	9	23.5	17	56	9.5
31.0	12	7.0	6	11	6.7	17	54	26.4

TARIKH		LATITUD	WAKTU TERBIT MATAHARI			WAKTU TERBENAM MATAHARI		
H	B	~	j	m	s	j	m	s
1.0	1	.0	5	59	37.3	18	6	51.8
1.0	1	1.0	6	1	19.2	18	5	10.1
1.0	1	2.0	6	3	1.1	18	3	28.4
1.0	1	3.0	6	4	43.1	18	1	46.7
1.0	1	4.0	6	6	25.1	18	0	4.8
1.0	1	5.0	6	8	7.4	17	58	22.8
1.0	1	6.0	6	9	49.9	17	56	40.4
1.0	1	7.0	6	11	32.8	17	54	57.8