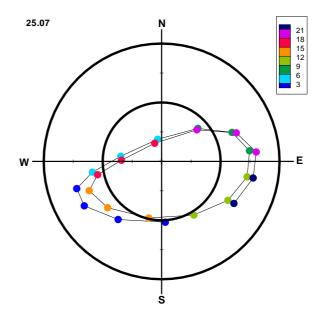


Tøknifrágreiðing

Sjóvarfalsrákið á Munkagrunninum í ár 2010

Knud Simonsen



Heiti / Title Sjóvarfalsrákið á Munkagrunninum

í ár 2010

Høvundur / Author Knud Simonsen

Náttúruvísindadeildin, Tórshavn

Faculty of Science and Technology, Tórshavn

@: knuds@setur.fo

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Bústaður / Address Nóatún 3, FO 100 Tórshavn , Føroyar / Faroe Islands

Postrúm / P.O. Box 2109, FO 165 Argir, Føroyar / Faroe Islands Tlf. · Fax · @ +298 352550 · +298 352551 · nvd@setur.fo

Inngangur

Útrokningarnar eru grundaðar á einari streymmáting á positión 61°12' N og 6°30' V á Munkagrunninum í tíðarskeiðinum 09.02 – 25.07 1981. Hettar er ein av fleiri streymmátingum, sum Fiskirannsóknarstovan framdi á hesum staðnum frá 1977 til 1982. Útrokningarnar eru gjørdar á Náttúruvísindadeildini á Fróðskaparsetur Føroya, sum partur av einari streymkunningar verkætlan. Meira fæst at vita um verkætlanina á vevsíðuni www.streymkort.fo.

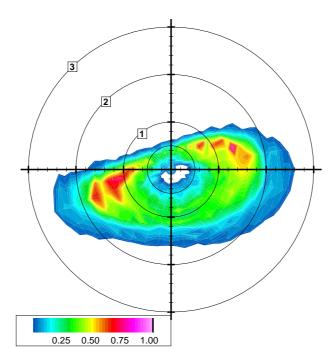
Fyrivarni

Útrokningar eru gjørdar eftir bestu sannføring og ongin ábyrgd verður tikin fyri avleiðingum orsakaðar av avgerðum grundaðar á hesar útrokningar. Um skeivleikar eru, so vil undirritaði fegin frætta um teir, soleiðis at neyðugar rættingar kunnu gerast. Viðmerkingar um streymkurvuna og talvuna annars eru eisini vælkomnar.

Knud Simonsen Náttúruvísindadeildin Fróðskaparsetur Føroya.

Streymrósa

Ein streymrósa vísir hvussu stóran brøkpart av einum árið, ið ráki á einum staðið hevur ávísa ferð og kós. Á mynd 1 er streymrósa fyri Munkagrunnin í ár 2009. Hon vísir, at eystfallið á mátistaðnum stórt sæð liggur millum eystan og høgan eystan, meðan vestfallið liggur millum vestan og útsynning. Streymferðin á broddi liggur oftast millum 0.5 og 2.0 knob, men stundum rekur nakað harðari. Eisini sæst, at tað er sjálvdan heilt kyrt á hesum staðnum.



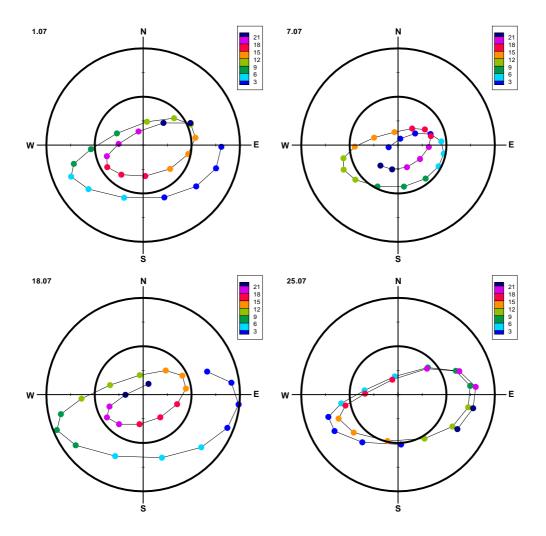
Mynd 1: Streymrósa fyri Munkagrunnin 2010. Sirklarnir vísa streymferð í knob, og litirnir vísa brøkpartin (%) av einum árið, ið rákið hevur ávísa ferð og kós í lopum á ávikavist 10° og 0.125 knob.

Streymellipsur

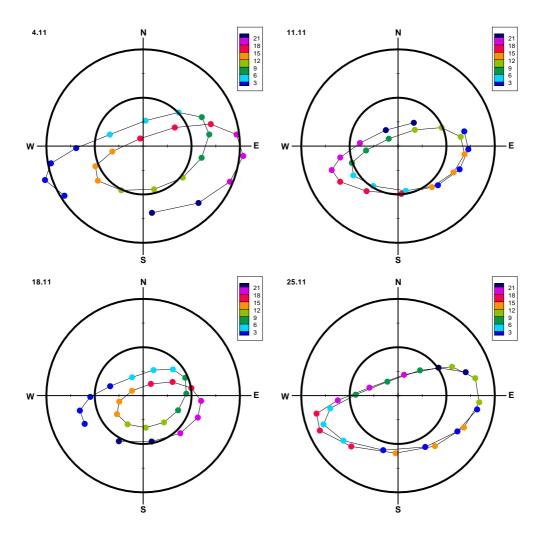
Streymurin til eina ávísa tíð kann lýsast við einum ørvi, sum vísir tann vegin, ið ráki er. Um slíkir ørvar verða teknaðir fyri fleiri tíðir, so fæst, at ørvurin ferðast eftur einum sindur fløtum sirkli, sum nevnist ein ellipsa.

Her á okkara leiðum er sjóvarfallið í stóran mun hálvdagligt, t.v.s. at tað fløðir og fjarðar tvær ferðir í einum døgni. Fyri streymin merkir hetta, at ørvurin skal ferðast kring tveimum ellipsum í einum samdøgni. Umframt tað hálvdagligt sjóvarfalli, so hevur sjóvarfall við øðrum periodum eisini týdning. Hetta ger, at sjóvarfalli broytist gjøgnum árið og stundum eisini at tvey fylgjandi sjóvarføll kunnu verða rættuliga ymisk.

Serliga á sunnaru leiðunum á landgrunninum hevur tað dagliga sjóvarfalli týðning. Hetta ger, at tveir fylgjandi broddar ikki altíð eru líka harðir ella at tvey fylgjandi kyrrindir ikki eru líka kyrr. Á myndunum 2 og 3 er hetta víst við sjóvarfals ellipsum á Munkagrunninum fyri nakrar dagar í 2009.



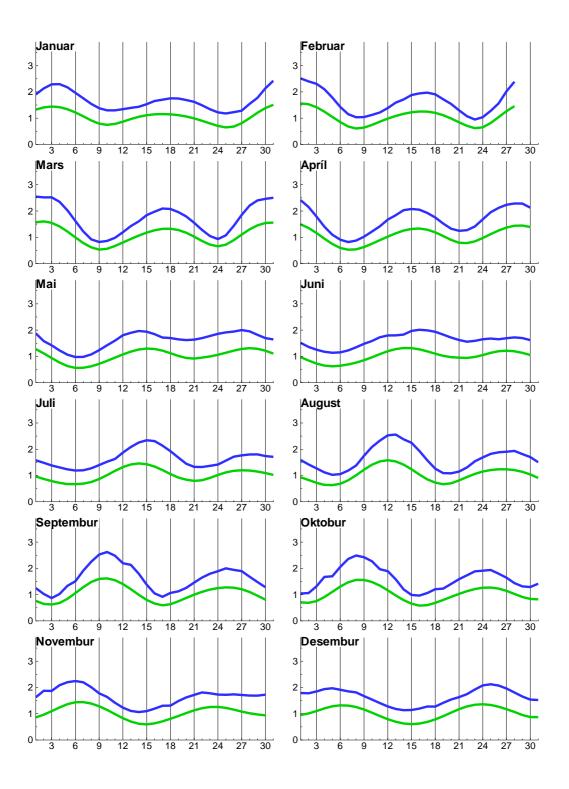
Mynd 2: Sjóvarfalsellipsur á Munkagrunninum fyri fýra dagar í juli mánaða í 2010. Litirnir vísa klokkutíðirnar. Fyrsta tíðin er kl $00^{00},$ og litirnir skifta hvønn triða tíma (GMT). Millum hvønn runda blettin er 15 minuttir. Sirklarnir vísa streymferðir uppá ávikavist 1 og 2 knob.



Mynd 3: Sjóvarfalsellipsur á Munkagrunninum fyri fýra dagar í november mánaða í 2010. Litirnir vísa klokkutíðirnar. Fyrsta tíðin er kl $00^{00},~\rm og$ litirnir skifta hvønn triða tíma (GMT). Millum hvønn runda blettin er 15 minuttir. Sirklarnir vísa streymferðir uppá ávikavist 1 og 2 knob.

Streymkurva

Streymkurvan á mynd 4 vísir dagligu miðal streymstyrkina (grøna linjan) og harðasta rákið fyri hvønn dag (bláa linjan) á mátistaðnum á Munkagrunninum. Hóast roknaða rákið bert er galdandi fyri sjálvt mátistaðið, so eru lutfalsligu broytingarnar galdandi fyri stórar partar av landgrunninum. Ferðin er givin í knob (sjómíl um tíman). Av tí at útrokningarnar eru grundaðar á mátingar, eigur ikki at verða roknað við nakrari seinking í streyminum í mun til kurvurnar.



Mynd 4: Streymkurva fyri Munkagrunnin 2010. Grøna linjan vísir dagligan miðal streym og bláa linjan vísir harðasta ráki fyri hvønn dagin á mátistaðnum.

Tíðir fyri kyrrindir og broddar

Úti á landgrunninum kann rákið lýsast við einum ørvi, har oddurin ferðast eftir einari ellipsu, sum greitt er frá í pettinum um streymellipsur. Broddur og kyrrindir eru, tá ørvurin er ávikavist longst og stytst, og er hetta nýtt til at rokna klokkutíðirnar fyri eystfalsbrodd (EFB), eystfalskyrrindir (EFK), vestfalsbrodd (VFB) og vestfalskyrrindir (VFK), sum standa í talvunum á teimum næstu síðunum.

Stundum ber tó ikki til at rokna klokkutíðirnar á hendan hátt. Hesar støðurnar eru merktar við strikum í talvunum.

Í tíðarskeiðinum frá 28 mars til 27 oktober, 2010, eru klokkutíðirnar føroysk summartíð í talvunum. Um samanborið verður við streymellipsunum á myndunum 2 og 3, so eru tíðirnar har ikki summartíð, men GMT (vetrar) tíð. Í mun til Suðuroyarfirði skiftir rákið á Munkagrunninum umleið hálvan tíma áðrenn.

Áftan fyri klokkutíðirnar er rákið á mátistaðnum givið í knob. Roknaða rákið er, sum fyri streymkurvuna, bert fyri mátistaðið á Munkagrunninum, og er sum so ikki galdandi aðrastaðni. Um hugt verður eftur tølunum, so sæst, at stundum eru tveir fylgjandi broddar, ella tveir fylgjandi vestfals (ella eystfals) broddar ikki líka harðir og at munur kann verða á kyrrindunum. Hetta er orsakað av dagliga sjóvarfallinum, sum greitt er frá frammanfyri. Hóast roknaða rákið ikki er galdandi aðrastaðni enn á mátistaðnum, so er tann lutfalsligi munurin tó galdandi á stórum parti á landgrunninum. Hesi viðurskiftini eru tó ikki galdandi flestu staðni nær landi og inni á firðunum, har streymurin er nærum eingin á kyrrindunum.

Við í útrokningunum er sjóvarfallið og eitt miðalrák, sum er í ein landsynningsunnan á mátistaðnum. Streymur, ið er orsakaður av vindi og broytandi barometurstandi, er ikki við.

Januar 2010 Pos.: 61°12' N, 6°30' V

Dag	EFB	EF	K	VFI	3	VF	K	Dag	EFI	В	EFF	ζ	VFI	3	VFI	K
	tt:mm <mark>rá</mark>			${ m tt:mm}$	rák	tt:mm			tt:mm	rák	tt:mm		${ m tt:mm}$		tt:mm	rák
01		00:39	1.2	03:04	1.7	06:19	0.3	16			01:29	0.9	03:44	1.3	06:45	0.4
	09:34	7 12:50	1.2	15:23	1.9	18:32	0.3		10:11	1.6	13:32	1.1	16:00	1.7	19:22	0.4
	22:01 1.9	9							22:36	1.4						
02		01:35	1.2	03:49	1.7	06:56	0.3	17			02:01	0.9	04:17	1.3	07:14	0.4
	10:22	13:38	1.3	16:10	2.1	19:29	0.4		10:48	1.7	14:06	1.1	16:34	1.7	19:59	0.4
	22:51 1.9	9							23:06	1.4						
03		02:27	1.1	04:33	1.6	07:33	0.3	18			02:30	0.8	04:46	1.2	07:39	0.4
	11:12 2.0	14:26	1.4	16:59	2.3	20:27	0.5		11:25	1.7	14:39	1.2	17:09	1.8	20:39	0.5
	23:41 1.8	3							23:36	1.3						
04		03:15	1.1	05:17	1.5	08:10	0.3	19			02:57	0.8	05:14	1.1	08:03	0.3
	12:01 2.3	15:16	1.5	17:49	2.3	21:26	0.5		12:01	1.7	15:14	1.2	17:44	1.8	21:21	0.5
05	00:31	04:01	0.9	06:00	1.3	08:48	0.2	20	00:07	1.2	03:22	0.7	05:42	1.0	08:27	0.3
	12:50 2	16:06	1.4	18:42	2.2	22:26	0.5		12:35	1.7	15:49	1.2	18:22	1.7	22:06	0.5
06	01:20 1.3	04:43	0.8	06:45	1.1	09:29	0.2	21	00:42	1.0	03:49	0.6	06:14	0.9	08:57	0.3
	13:40 2.0	17:00	1.3	19:37	2.0	23:29	0.5		13:10	1.6	16:26	1.1	19:04	1.6	22:54	0.5
07	02:09 1.0	05:21	0.6	07:34	0.9	10:16	0.1	22	01:22	0.9	04:22	0.5	06:51	0.8	09:32	0.2
	14:34 1.8	17:58	1.2	20:35	1.7				13:46	1.4	17:04	1.1	19:49	1.5	23:46	0.4
08		_				00:35	0.4	23	02:10	0.7	05:06	0.4	07:37	0.7	10:17	0.2
	03:02	05:55	0.5	08:30	0.7	11:13	0.1		14:29	1.2	17:44	1.0	20:40	1.4		
	15:39 1.0	19:03	1.1	21:37	1.5			24							00:44	0.3
09		_				01:42	0.3		03:09	0.6	06:01	0.4	08:35	0.5	11:15	0.1
	04:03	6 06:33	0.4	09:37	0.7	12:25	0.1		15:25	1.1	18:35	0.9	21:41	1.2		
	17:02	20:17	1.0	22:44	1.3			25							01:48	0.2
10		_				02:47	0.3		04:22	0.6	07:10	0.4	09:47	0.5	12:32	0.1
	05:13	07:22	0.5	10:54	0.7	13:51	0.2		16:44	1.0	19:53	0.9	22:56	1.2		
	18:26	21:31	1.0	23:50	1.2			26							02:55	0.2
11		_				03:40	0.3		05:45	0.7	08:45	0.5	11:14	0.6	14:02	0.1
	06:22 0.		0.6	12:10	0.9	15:18	0.2		18:22	1.1	21:23	0.9				
	19:30 1.3	22:36	0.9					27					00:12	1.2	03:54	
12	_	_		00:49	1.2	04:24	0.3		06:55	0.8	09:59	0.6	12:30	0.9	15:25	0.1
	07:22		0.8	13:12	1.1	16:28	0.3		19:30	1.3	22:38	1.0				
	20:18	23:30	0.9					28					01:13	1.3	04:42	0.2
13	_	_		01:41	1.2	05:02	0.3		07:50	1.1	10:54		13:31	1.3	16:35	0.2
	08:10		0.9	14:03	1.3	17:22	0.3		20:21	1.6	23:42	1.0				
	20:58			ı				29					02:05	1.5		
14		00:15	0.9		1.3	05:38	0.3		08:39	1.5	11:44	1.1	14:23	1.8	17:36	0.3
	08:52	12:17	1.0	14:46	1.4	18:06	0.3		21:08	1.8						
	21:33			ı				30			00:38	1.1	02:51	1.6		0.3
15	_	00:54	0.9		1.3	06:13	0.3		09:24	1.8	12:34	1.3	15:11	2.1	18:32	0.4
	09:32		1.1	15:24	1.6	18:45	0.4		21:53	1.9						
	22:05 1.5	5						31			01:26	1.1	03:34	1.6		
									10:09	2.1	13:23	1.5	15:58	2.4	19:25	0.5
									22:36	1.9						

Februar 2010 Pos.: 61°12' N, 6°30' V

Dag	EFF	3	EFF	<u> </u>	VFI	3	VFI	ζ	Dag	EFI	3	EFF	ζ	VFI	3	VFI	<u></u>
	tt:mm	rák	tt:mm	rák	${ m tt:mm}$	rák	${ m tt:mm}$	rák		tt:mm	rák	tt:mm	rák	tt:mm	rák	${ m tt:mm}$	rák
01			02:10	1.1	04:15	1.6	07:08	0.3	16			01:55	0.9	04:16	1.3	07:06	0.4
	10:53	2.3	14:12	1.6	16:45	2.5	20:17	0.6		10:54	1.9	14:08	1.3	16:40	2.0	20:08	0.5
	23:19	1.8								23:03	1.4						
02			02:49	1.1	04:56	1.5	07:45	0.3	17			02:21	0.8	04:44	1.2	07:30	0.4
	11:38	2.4	15:01	1.6	17:31	2.5	21:08	0.6		11:26	1.9	14:42	1.3	17:14	2.0	20:46	0.5
03	00:02	1.6	03:24	1.0	05:37	1.4	08:24	0.3		23:36	1.4						
	12:24	2.3	15:50	1.5	18:19	2.2	22:00	0.5	18			02:47	0.8	05:14	1.2	07:59	0.4
04	00:45	1.3	03:55	0.8	06:20	1.3	09:07	0.3		11:58	1.9	15:16	1.3	17:50	1.9	21:26	0.5
	13:12	2.1	16:43	1.3	19:08	1.9	22:52	0.4	19	00:12	1.2	03:17	0.7	05:48	1.1	08:32	0.4
05	01:30	1.0	04:23	0.6	07:07	1.1	09:55	0.3		12:30	1.7	15:51	1.2	18:28	1.8	22:08	0.4
	14:05	1.8	17:40	1.2	20:00	1.5	23:49	0.3	20	00:53	1.1	03:51	0.7	06:27	1.0	09:12	0.3
06	02:19	0.8	04:53	0.5	08:01	0.9	10.52	0.2		13:07	1.5	16:29	1.1	19:11	1.5	22:55	0.3
	15:13	1.4	18:47	1.0	20:57	1.2			21	01:39	0.9	04:30	0.6	07:13	0.9	09:59	0.3
07							00:53	0.2		13:51	1.3	17:14	1.0	20:00	1.3	23:53	0.2
	03:19	0.6	05:35	0.4	09:07	0.7	12:06	0.2	22	02:35	0.7	05:17	0.4	08:12	0.7	10:59	0.2
	16:49	1.2	20:09	0.9	22:05	1.0			.	14:51	1.1	18:17	0.8	21:02	1.1		
08							02:04	0.2	23							01:08	0.2
	04:38	0.5	06:23	0.4	10:29	0.7	13:43	0.2		03:46	0.6	06:14	0.4	09:27	0.7	12:23	0.1
	18:24	1.0	21:33	0.8	23:22	0.9				16:22	0.9	19:57	0.8	22:28	1.0		
09							03:10	0.2	24							02:29	0.2
	06:14	0.6	08:19	0.6	11:52	0.8	15:17	0.2		05:22	0.6	07:25	0.5	10:56	0.8	14:03	0.1
	19:27	1.1	22:37	0.7						18:25	1.0	21:33	0.8	23:55	1.0		
10					00:32	0.9	04:02	0.2	25							03:34	0.2
	07:30	0.8	10:18	0.7	12:57	1.0	16:24	0.3		06:52	0.8	09:26	0.7	12:16	1.1	15:30	0.2
l l	20:10	1.1	23:25	0.8					.	19:28	1.3	22:45	0.9				
11					01:26	1.0	04:43	0.2	26					00:58	1.1	04:20	0.2
	08:07	1.1	11:10	0.8	13:46	1.2	17:12	0.3		07:46	1.2	10:30	1.0	13:18	1.6	16:38	0.3
	20:41	1.2								20:14	1.6	23:42	1.0		4 0		0.0
12	00.40	4.0	00:03	0.8	02:10	1.1	05:19	0.3	27	00.00	1.0	44.04	4.0	01:48	1.3	04:57	0.2
	08:42	1.3	11:51	0.9	14:26	1.4	17:49	0.3		08:28	1.6	11:24	1.2	14:10	2.0	17:34	0.4
1.0	21:09	1.3	00.05	0.0	00.45	4.0		0.0	20	20:54	1.8	00.00		00.00		0 . 0 .	0.0
13	00.40	- ب	00:35	0.9	02:47	1.2	05:51	0.3	28	000-	2.0	00:28	1.1	02.02	1.4	00.0-	0.2
	09:16		12:27	1.0	15:01	1.6	18:23	0.4		09:07	2.0	12:15	1.4	14:57	2.4	18:25	0.5
1	21:37	1.4	01.00	0.0	00.00	1.0	0010	0.4		21:33	1.9						
14	00.40	4 =	01:03	0.9		1.2	06:18	0.4									
	09:49	1.7	13:01	1.1	15:35	1.7	18:57	0.4									
, ,	22:05	1.5	01.80	0.0	00.40	1.0	00.40	0.4	ı								
15	10.22	1.0	01:30	0.9		1.3	06:43	0.4									
	10:22	1.8	13:34	1.2	16:07	1.9	19:32	0.5	l								
	22:33	1.5															

Mars 2010 Pos.: 61°12' N, 6°30' V

Dag	EFI	3	EFF	ζ	VFI	3	VFI	K	Dag	EF	В	EFF	ζ	VFI	3	VF	K
	tt:mm	rák	tt:mm	rák	${ m tt:mm}$	rák	$\mathrm{tt:mm}$	rák		tt:mm	rák	tt:mm	rák	${ m tt:mm}$	rák	${ m tt:mm}$	rák
01			01:07	1.1	03:13	1.6	06:06	0.3	16			00:56	0.9	03:16	1.2	06:07	0.3
	09:48	2.4	13:05	1.6	15:42	2.6	19:12	0.5		09:51	1.9	12:59	1.3	15:37	2.0	19:02	0.5
	22:12	1.9								22:02	1.5						
02			01:42	1.1	03:54	1.6	06:43	0.3	17			01:23	0.9	03:45	1.3	06:32	0.4
	10:30	2.5	13:54	1.6	16:26	2.6	19:57	0.5		10:21	2.0	13:33	1.3	16:10	2.1	19:36	0.5
	22:51	1.8								22:33	1.6						
03			02:15	1.1	04:34	1.7	07:23	0.4	18			01:51	0.9	04:16	1.4	07:02	0.4
	11:14	2.5	14:44	1.6	17:09	2.4	20:41	0.5		10:51	2.0	14:08	1.4	16:44	2.1	20:11	0.5
	23:31	1.6								23:08	1.5						
04			02:45	1.0	05:15	1.6	08:06	0.4	19			02:21	0.9	04:50	1.4	07:36	0.4
	12:00	2.3	15:33	1.5	17:53	2.1	21:25	0.4		11:24	2.0	14:45	1.3	17:20	2.0	20:47	0.4
05	00:12	1.3	03:14	0.9	05:58	1.4	08:52	0.4		23:46	1.4						
	12:48	2.0	16:26	1.3	18:37	1.7	22:09	0.3	20			02:54	0.9	05:28	1.4	08:15	0.4
06	00:56	1.1	03:44	0.7	06:43	1.2	09:42	0.4		12:00	1.8	15:24	1.2	17:58	1.8	21:28	0.4
	13:42	1.6	17:23	1.1	19:23	1.3	22:57	0.2	21	00:28	1.3	03:29	0.8	06:09	1.2	08:59	0.3
07	01:46	0.8	04:20	0.6	07:36	1.0	10:42	0.3		12:41	1.6	16:08	1.1	18:41	1.5	22:14	0.3
	14:54	1.2	18:33	0.9	20:14	0.9	23:55	0.1	22	01:16	1.0	04:06	0.7	06:58	1.1	09:53	0.3
08	02:48	0.6	05:03	0.5	08:41	0.8	12:00	0.3		13:31	1.3	17:06	0.9	19:32	1.2	23:13	0.2
	16:37	0.9	20:12	0.7	21:17	0.7			23	02:14	0.8	04:50	0.6	07:58	0.9	11:02	0.2
09							01:09	0.1		14:39	1.1	18:29	0.8	20:36	0.9		
	04:10	0.5	05:48	0.5	10:05	0.7	13:39	0.2	24							00:29	0.1
	18:11	0.8	21:43	0.6	22:52	0.6				03:31	0.6	05:40	0.5	09:15	0.9	12:35	0.2
10							02:30	0.1		16:32	0.9	20:11	0.7	22:03	0.8		
	07:31	0.6	08:19	0.6	11:30	0.8	15:11	0.3	25							01:52	0.1
	19:12	0.9	22:36	0.6						05:19	0.7	06:41	0.7	10:43	1.1	14:13	0.2
11					00:11	0.6	03:33	0.1		18:17	1.1	21:41	0.8	23:31	0.8		
	07:30	0.8	09:44	0.7	12:33	1.0	16:11	0.3	26							02:56	0.1
	19:49	1.0	23:16	0.6						06:47	1.0	09:00	0.9	12:01	1.4	15:32	0.3
12					01:06	0.8	04:18	0.2		19:13	1.3	22:44	0.8				
	07:54	1.0	10:35	0.8	13:21	1.2	16:52	0.3	27					00:33	1.0	03:42	0.1
	20:14	1.1	23:47	0.7						07:27	1.4	10:06	1.1	13:02	1.9	16:33	0.4
13					01:47	0.9	04:51	0.3		19:54	1.5	23:30	0.9				
	08:22	1.3	11:15	0.9	13:59	1.4	17:25	0.4	28					02:23	1.2	05:21	0.1
	20:39	1.2								09:05	1.8	12:02	1.3	14:52	2.2	18:25	0.5
14			00:11	0.8	02:19	1.0	05:19	0.3		21:31	1.7						
	08:52	1.5	11:51	1.0	14:34	1.6	17:57	0.4	29			01:06	1.0	03:08	1.3	05:59	0.2
	21:05	1.4								09:43	2.2	12:55	1.4	15:38	2.4	19:10	0.5
15			00:32	0.9	02:48	1.2	05:43	0.3		22:07	1.7						
	09:22	1.7	12:25	1.2	15:06	1.8	18:29	0.5	30			01:38	1.1	03:50	1.5	06:40	0.3
	21:32	1.5								10:25	2.4	13:47	1.5	16:22	2.5	19:52	0.5
										22:44	1.8						
									31			02:09	1.1	04:32	1.7	07:23	0.3
										11:08	2.5	14:37	1.6	17:04	2.4	20:32	0.5
										23:23	1.7						

Apríl 2010 Pos.: 61°12' N, 6°30' V

Dag	EFI	3	EFF	ζ	VFI	3	VFI	ζ	Dag	EFI	3	EFF	ζ	VFI	3	VFI	<u> </u>
	tt:mm	rák	tt:mm	rák	${ m tt:mm}$	rák	${ m tt:mm}$	rák		tt:mm	rák	tt:mm	rák	${ m tt:mm}$	rák	${ m tt:mm}$	rák
01			02:41	1.1	05:13	1.8	08:08	0.4	16			02:26	1.0	04:52	1.5	07:39	0.4
	11:53	2.4	15:27	1.5	17:45	2.2	21:10	0.4		11:21	2.0	14:39	1.3	17:16	2.1	20:38	0.4
02	00:03	1.6	03:14	1.1	05:55	1.7	08:54	0.4		23:44	1.6						
	12:40	2.2	16:17	1.4	18:27	1.8	21:48	0.3	17			03:00	1.0	05:30	1.5	08:19	0.4
03	00:45	1.4	03:51	1.0	06:38	1.6	09:43	0.4		11:57	1.9	15:21	1.3	17:55	1.9	21:15	0.4
	13:29	1.8	17:08	1.2	19:08	1.5	22:27	0.3	18	00:25	1.5	03:36	1.0	06:11	1.5	09:04	0.4
04	01:31	1.2	04:31	0.8	07:24	1.3	10:36	0.4		12:39	1.8	16:09	1.2	18:36	1.7	21:57	0.3
	14:24	1.4	18:04	0.9	19:51	1.1	23:09	0.2	19	01:10	1.4	04:15	0.9	06:56	1.5	09:56	0.3
05	02:23	1.0	05:14	0.7	08:15	1.1	11:38	0.3		13:27	1.6	17:04	1.0	19:21	1.4	22:44	0.3
	15:34	1.0	19:12	0.7	20:36	0.7	23:59	0.1	20	02:03	1.2	04:57	0.9	07:48	1.3	10:58	0.3
06	03:25	0.8	06:03	0.6	09:18	0.9	12:53	0.3		14:25	1.3	18:11	0.9	20:14	1.1	23:38	0.2
	17:01	0.8							21	03:07	1.0	05:47	0.8	08:51	1.2	12:16	0.3
07							01:06	0.1		15:42	1.1	19:34	0.7	21:17	0.8		
	04:41	0.6	06:59	0.5	10:35	0.8	14:23	0.2	22							00:45	0.1
	18:29	0.7								04:25	0.9	06:49	0.8	10:06	1.3	13:47	0.3
08							02:30	0.1		17:24	1.0	21:08	0.7	22:29	0.7		
	06:36	0.6	08:34	0.6	11:54	0.9	15:47	0.3	23							01:57	0.1
	19:34	0.7	23:35	0.5						05:52	1.0	08:17	0.9	11:27	1.4	15:14	0.4
09					00:30	0.5	03:42	0.1		18:47	1.1	22:34	0.7	23:48	0.7		
	07:50	0.8	09:55	0.7	12:58	1.0	16:43	0.3	24							03:01	0.0
	20:09	0.8								07:03	1.2	09:36	1.0	12:40	1.7	16:26	0.5
10			00:06	0.6	01:27	0.6	04:31	0.2		19:43	1.2	23:27	0.8				
	08:23	1.0	10:49	0.8	13:47	1.2	17:23	0.4	25					00:56	0.9	03:54	0.1
	20:36	1.0								07:54	1.5	10:42	1.2	13:40	2.0	17:22	0.5
11			00:27	0.7	02:07	0.7	05:06	0.2		20:24	1.3						
	08:53	1.2	11:32	0.9	14:26	1.4	17:56	0.4	26			00:02	0.9	01:52	1.0	04:43	0.1
	21:03	1.1								08:38	1.9	11:41	1.3	14:31	2.2	18:09	0.5
12			00:40	0.8	02:39	0.9	05:34	0.3		21:02	1.5						
	09:21	1.4	12:10	1.0	15:01	1.7	18:27	0.5	27			00:33	1.0	02:42	1.3	05:31	0.2
	21:31	1.3								09:21	2.1	12:37	1.4	15:17	2.3	18:50	0.5
13			00:59	0.8	03:10	1.0	06:01	0.3		21:40	1.5						
	09:49	1.6	12:46	1.2	15:34	1.9	18:58	0.5	28			01:03	1.0		1.5	06:20	0.3
	22:00	1.5								10:06	2.3	13:31	1.4	16:00	2.2	19:28	0.4
14			01:25	0.9		1.2	06:30	0.3		22:18	1.6						
	10:18	1.8	13:22	1.3	16:07	2.0	19:30	0.5	29			01:37	1.1	04:12	1.7		0.4
	22:32	1.6								10:51	2.3	14:23	1.4	16:42	2.1	20:04	0.4
15			01:55	0.9	-	1.3	07:02	0.3		22:58	1.6						
	10:48	1.9	14:00	1.3	16:41	2.1	20:03	0.4	30			02:16	1.1	04:56	1.8	07:58	0.4
	23:06	1.6								11:38	2.1	15:12	1.3	17:23	1.9	20:39	0.3
										23:41	1.6						

Mai 2010 Pos.: 61°12' N, 6°30' V

Dag	EFF	3	EFF	ζ	VFI	3	VFI	ζ	Dag	EFI	3	EFK		VFE	3	VFF	ζ
	tt:mm	rák	tt:mm	rák	${ m tt:mm}$	rák	${ m tt:mm}$	rák		tt:mm	rák	tt:mm	rák	${ m tt:mm}$	rák	${ m tt:mm}$	rák
01			02:59	1.1	05:39	1.7	08:48	0.4	16			02:44	1.1	05:13	1.7	08:09	0.3
	12:25	1.9	16:00	1.2	18:04	1.6	21:14	0.3		11:41	1.9	15:10	1.2	17:37	1.8	20:51	0.3
02	00:26	1.5	03:45	1.1	06:22	1.6	09:38	0.4	17	00:10	1.6	03:25	1.1	05:58	1.7	09:02	0.3
	13:13	1.6	16:48	1.0	18:45	1.3	21:52	0.2		12:29	1.7	16:04	1.1	18:21	1.6	21:33	0.3
03	01:14	1.4	04:29	1.0	07:07	1.4	10:30	0.4	18	01:00	1.6	04:10	1.1	06:46	1.7	10:00	0.3
	14:04	1.3	17:38	0.8	19:26	1.0	22:31	0.2		13:22	1.6	17:02	1.0	19:08	1.3	22:17	0.3
04	02:06	1.2	05:14	0.8	07:56	1.2	11:28	0.3	19	01:57	1.4	04:59	1.1	07:40	1.7	11:07	0.4
	15:00	1.0	18:33	0.6	20:08	0.7	23:14	0.1		14:24	1.3	18:06	0.8	19:59	1.0	23:05	0.2
05	03:02	1.0	05:59	0.7	08:51	1.1	12:34	0.3	20	02:59	1.4	05:54	1.1	08:42	1.6	12:23	0.4
	16:04	0.7	19:40	0.5	20:43	0.5				15:36	1.1	19:16	0.7	20:55	0.8	23:57	0.1
06							00:03	0.1	21	04:03	1.3	06:55	1.1	09:51	1.6	13:44	0.4
	04:06	0.8	06:49	0.7	09:56	1.0	13:49	0.3		16:51	1.0	20:32	0.6	21:54	0.7		
	17:13	0.6				—			22							00:56	0.0
07							01:05	0.1		05:09	1.3	08:03	1.1	11:04	1.7	15:03	0.5
	05:21	0.7	07:49	0.7	11:06	1.0	15:04	0.3		18:02	1.0	21:49	0.6	23:01	0.7		
	18:18	0.6	_			—			23							02:01	0.0
08							02:12	0.1		06:18	1.4	09:14	1.1	12:13	1.8	16:10	0.5
	06:44	0.8	08:57	0.7	12:11	1.1	16:05	0.4		19:01	1.0	22:41	0.7				
_	19:09	0.7							24					00:16	0.8	03:06	0.0
09							03:11	0.1		07:21	1.6	10:21	1.2	13:14	1.9	17:04	0.5
	07:37	0.9	09:55	0.8	13:04	1.2	16:47	0.4	25	19:50	1.1	23:18	0.8	04.00	0.0	0.4.4.0	0 1
1.0	19:49	0.8			00.00	0.0	00.50	0.0	25	00.10	1.0	11.04	1.0	01:22	0.9	04:10	0.1
10	00 14	4 4	10.40	0.0	00:29	0.6	03:59	0.2		08:16	1.8	11:24	1.2	14:07	1.9	17:49	0.4
	08:14	1.1	10:43	0.9	13:47	1.4	17:22	0.4	0.0	20:33	1.2	23:53	0.9	00.10	1.0	OF 11	0.0
11	20:24	1.0	00.09	0.7	01.45	0.7	04.40	0.0	26	00.00	1.0	10.04	1.3	02:18	1.2	05:11	0.2
11	00.45	1 9	00:03	1.0	01:45	1.6	04:40	0.2		09:06	1.9	12:24	1.5	14:55	1.9	18:28	0.4
	08:45 $20:57$	1.3 1.2	11:25	1.0	14:25	1.6	17:54	0.4	27	21:15	1.4	00:32	1.0	03:09	1.4	06:08	0.3
12	20:07	1.2	00:26	0.8	02:30	0.9	05:18	0.2	21	09:54	2.0	13:19	1.3		1.4		0.3
14	09:15	1.5	12:06	1.1	02:30 15:01	1.8	18:26	$0.2 \\ 0.4$		09:54 $21:58$	1.5	15:19	6.1	15:40	1.0	19:03	0.5
	21:30	1.4	12:00	1.1	19:01	1.0	10:20	0.4	28	21:00	1.0	01:17	1.1	03:56	1.6	07:02	0.4
13	21:30	1.4	00:56	0.8	03:11	1.1	05:57	0.2	20	10:41	2.0	14:10	1.3	16:22	1.7	19:37	$0.4 \\ 0.3$
10	09:46	1.7	12:48	1.2	15:37	1.1	19:00				1.6	14.10	1.0	10.22	1.1	19.01	0.5
	22:05	1.7	12.40	1.4	19.97	1.9	19.00	0.4	29	22.41	1.0	02:05	1 1	04:41	1.7	07:53	0.4
14	22.00	1.0	01:30	0.0	03:51	1.3	06:38	0.3	29	11:27	1.8	14:57	1.1	17:04	1.6		0.4
1.4	10:20	1.8	13:32	1.3	16:15	2.0	19:35	$0.3 \\ 0.4$		23:25	1.7	14.01	1.2	11.04	1.0	20.12	0.0
	22:43	1.6	10.04	U.J	10.10	2.0	19.00	0.4	30	∠⊍.∠⊍	1.7	02:53	1.2	05:24	1.7	08:42	0.4
15	44.40	1.0	02:05	1.0	04:32	1.5	07:22	0.3	30	12:11	1.7	15:41	1.1	17:45	1.4	20:48	$0.4 \\ 0.3$
1.0	10:58	1.9	14:20	1.3	16:55	1.9	20:12	0.3	31	00:11	1.6	03:38	1.1	06:06	1.4	09:29	$0.3 \\ 0.4$
	23:24	1.7	14.40	1.0	10.00	1.9	40.14	0.5	1 21	12:54	1.5	16:24	0.9	18:25	1.0	21:25	$0.4 \\ 0.3$
	ZJ: Z4	1.7								14:04	1.0	10:24	0.9	10:20	1.2	Z1:Z0	0.0

Juni 2010 Pos.: 61°12' N, 6°30' V

Dag	EFI	3	EFK	<u> </u>	VFE	3	VFI	Κ	Dag	EFI	3	EFF	ζ	VFI	3	VFI	K
	tt:mm	rák	${ m tt:mm}$	rák	${ m tt:mm}$	rák	${ m tt:mm}$	rák		tt:mm	rák	tt:mm	rák	${ m tt:mm}$	rák	${ m tt:mm}$	rák
01	00:58	1.5	04:19	1.0	06:48	1.5	10:16	0.4	16	00:52	1.8	04:04	1.3	06:36	2.1	10:03	0.4
	13:35	1.2	17:05	0.8	19:04	1.0	22:00	0.3		13:16	1.6	16:52	1.0	18:54	1.3	21:51	0.3
02	01:45	1.4	04:58	1.0	07:32	1.4	11:07	0.4	17	01:44	1.8	04:54	1.3	07:29	2.0	11:07	0.5
	14:17	1.0	17:45	0.6	19:40	0.7	22:34	0.2		14:12	1.4	17:45	0.8	19:41	1.1	22:32	0.2
03	02:33	1.2	05:38	0.9	08:19	1.3	12:03	0.4	18	02:37	1.8	05:46	1.3	08:27	2.0	12:15	0.5
	15:00	0.8	18:25	0.4	20:14	0.5	23:06	0.2		15:10	1.2	18:38	0.7	20:30	0.9	23:16	0.1
04	03:24	1.1	06:20	0.8	09:11	1.2	13:06	0.3	19	03:31	1.7	06:42	1.2	09:29	1.9	13:27	0.5
	15:48	0.6	19:03	0.4	20:49	0.4	23:42	0.1		16:09	1.0	19:30	0.6	21:25	0.7		
05	04:20	1.0	07:07	0.8	10:08	1.1	14:13	0.4	20							00:09	0.1
	16:47	0.5	19:44	0.3	21:28	0.4				04:30	1.6	07:45	1.2	10:34	1.7	14:39	0.4
06							00:31	0.1		17:11	0.8	20:21	0.5	22:28	0.7		
	05:24	0.9	08:00	0.8	11:10	1.2	15:15	0.4	21							01:13	0.0
	17:54	0.5	20:40	0.4	22:09	0.4				05:41	1.5	08:55	1.1	11:42	1.6	15:46	0.4
07							01:34	0.1		18:16	0.8	21:15	0.6	23:43	0.7		
	06:31	1.0	08:56	0.8	12:08	1.2	16:04	0.4	22							02:30	0.1
	18:54	0.7	22:11	0.5	23:01	0.5				06:58	1.5	10:07	1.1	12:46	1.6	16:41	0.3
08							02:41	0.1		19:16	0.8	22:18	0.6				
	07:25	1.0	09:50	0.9	13:00	1.3	16:43	0.4	23					00:56	0.9	03:49	0.2
	19:42	0.8	23:13	0.6						08:06	1.6	11:16	1.1	13:44	1.5	17:26	0.3
09					00:48	0.6	03:44	0.1		20:10	1.0	23:18	0.8				
	08:06	1.2	10:41	1.0	13:46	1.5	17:20	0.3	24					02:00	1.1	05:02	0.3
	20:24	1.0	23:52	0.7						09:01	1.7	12:18	1.1	14:36	1.5	18:05	0.3
10					01:54	0.8	04:40	0.2		20:59	1.2						
	08:43	1.3	11:32	1.0	14:30	1.6	17:57	0.3	25			00:15	0.9	02:55	1.4	06:05	0.3
	21:04	1.3								09:50	1.7	13:11	1.1	15:23	1.5	18:41	0.3
11			00:29	0.8	02:45	1.1	05:32	0.2		21:45	1.4						
	09:21	1.5	12:24	1.1	15:13	1.7	18:35	0.3	26			01:08	1.0	03:43	1.6	07:00	0.4
	21:44	1.4								10:33	1.7	13:58	1.1	16:07	1.5	19:16	0.3
12			01:07	0.9	03:31	1.3	06:22	0.2		22:29	1.6						
	10:02	1.7	13:17	1.2	15:56	1.8	19:14	0.3	27			01:57	1.1	04:27	1.7	07:47	0.4
	22:26	1.6								11:13	1.6	14:40	1.0	16:48	1.4	19:52	0.3
13			01:47	1.0	04:15	1.6	07:13	0.2		23:13	1.7						
	10:46	1.8	14:11	1.2	16:39	1.8	19:53	0.3	28			02:41	1.2	05:08	1.7	08:31	0.4
	23:11	1.7								11:51	1.5	15:18	1.0	17:27	1.3	20:27	0.3
14			02:31	1.2	05:00	1.8	08:07	0.3		23:56	1.7						
	11:33	1.8	15:05	1.2	17:24	1.7	20:32	0.3	29			03:21	1.1	05:47	1.7	09:12	0.4
15	00:00	1.8	03:17	1.3	05:47	2.0	09:03	0.4		12:27	1.4	15:54	0.9	18:04	1.2	21:00	0.3
	12:23	1.8	15:58	1.1	18:08	1.5	21:11	0.3	30	00:38	1.7	03:58	1.1	06:25	1.7	09:54	0.4
										13:01	1.3	16:27	0.8	18:37	1.0	21:29	0.3

Juli 2010 Pos.: 61°12' N, 6°30' V

Dag	EFE	3	EFF	ζ	VFI	3	VFF	ζ	Dag	EFI	3	EFF	ζ	VFI	3	VFI	ζ
	tt:mm	rák	tt:mm	rák	${ m tt:mm}$	rák	${ m tt:mm}$	rák		tt:mm	rák	tt:mm	rák	${ m tt:mm}$	rák	${ m tt:mm}$	rák
01	01:19	1.6	04:33	1.1	07:03	1.6	10:38	0.4	16	01:22	2.2	04:40	1.5	07:13	2.3	10:53	0.5
	13:34	1.1	16:57	0.6	19:07	0.8	21:55	0.3		13:48	1.5	17:11	0.9	19:18	1.2	22:03	0.3
02	01:59	1.5	05:09	1.0	07:43	1.5	11:27	0.4	17	02:09	2.1	05:31	1.4	08:05	2.1	11:53	0.5
	14:08	0.9	17:23	0.5	19:35	0.7	22:19	0.2		14:37	1.2	17:49	0.7	20:04	1.0	22:47	0.2
03	02:38	1.4	05:46	1.0	08:26	1.4	12:20	0.4	18	03:00	1.9	06:26	1.3	09:01	1.9	12:56	0.4
	14:44	0.7	17:52	0.4	20:08	0.6	22:49	0.2		15:27	0.9	18:22	0.6	20:57	0.9	23:39	0.2
04	03:18	1.2	06:25	0.9	09:12	1.3	13:16	0.4	19	03:59	1.7	07:29	1.2	10:01	1.6	14:03	0.3
	15:27	0.6	18:30	0.3	20:49	0.5	23:29	0.1		16:24	0.7	18:57	0.4	21:59	0.7		
05	04:03	1.1	07:07	0.9	10:04	1.2	14:14	0.4	20							00:45	0.1
	16:27	0.5	19:23	0.3	21:40	0.4				05:16	1.5	08:43	1.0	11:07	1.3	15:12	0.2
06							00:26	0.1		17:33	0.6	19:44	0.4	23:15	0.7		
	05:00	1.0	07:54	0.8	11:02	1.2	15:10	0.3	21							02:10	0.2
	17:44	0.6	20:33	0.4	22:42	0.4				06:50	1.3	10:03	1.0	12:18	1.2	16:13	0.2
07							01:39	0.1		18:49	0.6	20:47	0.6				
	06:15	0.9	08:54	0.8	12:07	1.2	16:01	0.3	22					00:36	0.9	03:44	0.2
	18:56	0.7	22:10	0.5						08:07	1.3	11:16	0.9	13:23	1.1	17:03	0.2
08					00:09	0.5	02:59	0.1		19:59	0.8	22:59	0.7				
	07:27	1.0	10:04	0.9	13:09	1.3	16:50	0.2	23					01:47	1.1	05:03	0.3
	19:54	0.9	23:13	0.6						09:01	1.4	12:16	0.9	14:20	1.2	17:44	0.2
09					01:26	0.8	04:13	0.1		20:54	1.1						
	08:21	1.2	11:12	1.0	14:05	1.4	17:35	0.2	24			00:04	0.9	02:43	1.3	06:05	0.3
	20:43	1.1								09:44	1.4	13:04	0.9	15:09	1.2	18:22	0.3
10			00:00	0.7	02:24	1.1	05:17	0.1		21:38	1.4						
	09:08	1.4	12:14	1.0	14:55	1.5	18:17	0.3	25			00:56	1.0	03:30	1.5	06:53	0.4
	21:29	1.4								10:19	1.5	13:44	0.9	15:52	1.3	18:58	0.3
11			00:45	0.9	03:15	1.4	06:15	0.2		22:19	1.6						
	09:53	1.6	13:13	1.1	15:42	1.6	18:57	0.3	26			01:41	1.1	04:11	1.7	07:34	0.4
	22:15	1.6								10:52	1.5	14:19	1.0	16:31	1.3	19:32	0.4
12			01:30	1.1	04:02	1.8	07:11	0.3		22:58	1.7						
	10:39	1.8	14:07	1.1	16:27	1.7	19:34	0.3	27			02:20	1.2	04:48	1.7	08:11	0.4
	23:01	1.9								11:24	1.5	14:52	0.9	17:06	1.3	20:04	0.4
13			02:17	1.3	04:48	2.1	08:05	0.4		23:36	1.8						
	11:25	1.9	14:57	1.1	17:10	1.7	20:10	0.3	28			02:55	1.2	05:24		08:48	0.4
	23:48	2.1								11:55	1.5	15:21	0.9	17:38	1.2	20:31	0.4
14	,		03:04	1.5		2.3		0.5	29	00:12	1.8	03:29	1.2	05:58	1.8	09:26	0.5
	12:12	1.8	15:45	1.1	17:52	1.6	20:47	0.3		12:25	1.4	15:48	0.8	18:06	1.1	20:55	0.4
15	00:35	2.2	03:51	1.5	06:23	2.4	09:56	0.5	30	00:47	1.8	04:02	1.2	06:32	1.8	10.05	0.5
	13:00	1.7	16:29	1.0	18:35	1.4	21:24	0.3		12:55	1.2	16:12	0.7	18:32	1.0	21:19	0.3
									31	01:20	1.7	04:35	1.2	07:07	1.7	10:47	0.5
										13:27	1.1	16:36	0.6	19:00	0.9	21:44	0.3

August 2010 Pos.: 61°12' N, 6°30' V

Dag	EFI	В	EFK		VFI	3	VFF	ζ	Dag	EF	В	EFF	<u> </u>	VFI	3	VFI	K
	tt:mm	rák	tt:mm	rák	${ m tt:mm}$	rák	${ m tt:mm}$	rák		tt:mm	rák	${ m tt:mm}$	rák	${ m tt:mm}$	rák	tt:mm	rák
01	01:52	1.6	05:09	1.1	07:44	1.6	11:31	0.4	16	02:34	2.0	06:12	1.3	08:30	1.7	12:14	0.3
	14:03	0.9	17:03	0.5	19:33	0.8	22:16	0.3		14:51	0.9	17:28	0.6	20:32	1.0	23:24	0.3
02	02:25	1.4	05:44	1.0	08:25	1.4	12:18	0.4	17	03:36	1.6	07:17	1.1	09:24	1.3	13:15	0.2
	14:46	0.8	17:39	0.4	20:14	0.7	22:57	0.2		15:47	0.6	18:07	0.4	21:34	0.9		
03	03:03	1.2	06:21	0.9	09:10	1.3	13:11	0.3	18							00:35	0.2
	15:37	0.6	18:27	0.4	21:07	0.6	23:51	0.2		05:04	1.3	08:39	0.9	10:29	1.0	14:26	0.1
04	03:53	1.0	07:05	0.8	10:05	1.1	14:12	0.2		17:00	0.5	18:55	0.4	22:53	0.8		
	16:44	0.6	19:29	0.3	22:15	0.5			19							02:08	0.2
05							01:04	0.1		06:51	1.1	10:11	0.8	11:48	0.8	15:38	0.1
	05:06	0.9	08:10	0.8	11:17	1.0	15:21	0.2		18:36	0.6	19:42	0.5				
	18:11	0.6	20:55	0.4	23:40	0.6			20					00:20	0.9	03:48	0.3
06							02:36	0.1		08:05	1.1	11:22	0.7	13:05	0.8	16:37	0.1
	06:59	0.9	09:49	0.8	12:40	1.1	16:25	0.2		20:21	0.8	22:44	0.7				
	19:32	0.8	22:33	0.6					21					01:33	1.1	05:04	
07					01:04	0.8	04:02	0.1		08:54	1.2	12:12	0.7	14:06	0.9	17:24	0.2
	08:12	1.1	11:09	0.9	13:47	1.2	17:17	0.2		20:56	1.1	23:45	0.8				
	20:32	1.0	23:32	0.8					22					02:27	1.3	05:57	0.4
08					02:07	1.2	05:13	0.2		09:28	1.2	12:52	0.8	14:54	1.0	18:03	0.3
	09:01	1.4	12:13	1.0	14:41	1.3	17:59	0.3		21:30	1.3						
	21:20	1.4							23			00:33	1.0	03:11	1.5	06:38	0.4
09			00:23	1.0	03:00	1.6	06:13	0.2		09:56	1.3	13:25	0.9	15:34	1.2	18:37	0.3
	09:45	1.6	13:09	1.1	15:28	1.5	18:35	0.3	1	22:03	1.5						
	22:04	1.8							24			01:14	1.1	03:48	1.6	07:13	0.4
10	40.0-	4.0	01:11	1.3	03:48	2.1	07:07	0.4		10:24	1.4	13:54	0.9	16:08	1.3	19:07	0.4
	10:27	1.8	13:57	1.1	16:10	1.6	19:10	0.3	2.5	22:37	1.7	04 50		0.4.00	4 0	0= 40	0 4
	22:46	2.1	01 50	4 -	04.04	0.4	0= =0	0 =	25	10 50	4 =	01:50	1.1	04:23	1.8	07:46	0.4
11	11.00	1.0	01:59	1.5	04:34	2.4	07:59	0.5		10:52	1.5	14:21	0.9	16:39	1.3	19:34	0.4
	11:09	1.9	14:41	1.1	16:52	1.6	19:45	0.3	0.0	23:10	1.8	00.00	1.0	04.50	1.0	00.10	0.5
1.0	23:28	2.4	00.40	1 0	05.00	0.0	00.40	0 5	26	11.01	1 1	02:23	1.2	04:56	1.9	08:19	0.5
12	11 50	1.0	02:46	1.6	05:20	2.6	08:49	0.5		11:21	1.5	14:46	0.9	17:06	1.3	19:58	0.4
13	11:52	1.9 2.5	15:21 03:34	1.1	$17:32 \\ 06:05$	1.6 2.6	20:21	0.3	0.7	23:41	1.9	00 55	1 9	05.00	1.0	00 54	0.5
13	00:11 $12:35$			1.6			09:39	0.6	27	11:51	1 5	02:55	1.3		1.9		
1 4		1.7	15:58	1.1	18:13	1.6	21:00	0.3	0.0						1.2	20:21	0.4
14	00:56	2.4	04:23	1.6	06:52	2.4	10:29	0.5	28	00:12	1.9	03:28	1.3		1.9	09:29	0.5
15	13:18 01:43	1.5	16:31 05:15	0.9	18:55	1.4	21:42	0.3	29	12:22 $00:42$	1.4	15:35	0.8	18:01 06:33	1.2	20:48	0.4
1.9		2.3		1.4		2.1	11:20	$\begin{bmatrix} 0.4 \\ 0.3 \end{bmatrix}$	49		1.9	04:00	1.3		1.9	10:06	0.5
	14:02	1.2	16:59	0.8	19:40	1.2	22:29	0.3	90	12:55	1.3	16:02	0.7	18:33	1.1	21:19 10:43	0.4
									30	01:13 13:32	1.7	04:34 $16:32$	1.2	07:08	1.7	10:43 21:56	0.4
									21		1.1		0.7	19:09	1.1		$\begin{bmatrix} 0.3 \\ 0.3 \end{bmatrix}$
									31	01:46	1.5	05:09	1.1	07:46	1.5	11:25	0.3
									1 1	14:15	1.0	17:07	0.0	19:51	0.9	22:41	0.3

${\bf September 2010}$

Pos.: 61°12' N, 6°30' V

Dag	EFE	3	EFF	ζ	VFE	3	VFI	K	Dag	EFI	В	EFI	K	VFI	3	VFI	K
	${ m tt:mm}$	rák		tt:mm	rák	${ m tt:mm}$	rák	${ m tt:mm}$	rák	${ m tt:mm}$	rák						
01	02:27	1.3	05:49	0.9	08:30	1.2	12:15	0.3	16	_						00:35	0.3
	15:06	0.8	17:52	0.5	20:45	0.8	23:38	0.2		04:57	1.0	08:38	0.7	09:46	0.7	13:30	0.0
02	03:19	1.0	06:41	0.8	09:25	1.0	13:22	0.2		16:37	0.6	18:37	0.5	22:34	0.9	ı	
	16:10	0.6	18:46	0.4	21:55	0.7			17	l						02:10	0.3
03							00:56	0.1	[06:36	0.9	10:23	0.6	11:12	0.6	14:52	0.1
	04:37	0.9	08:08	0.7	10:41	0.9	14:43	0.2		18:35	0.6	20:34	0.6				
	17:41	0.6	19:50	0.5	23:20	0.8			18					00:00	0.9	03:45	0.3
04	•				•		02:33	0.1		07:49	0.9	11:20	0.6	12:42	0.6	16:03	0.1
	06:49	0.9	09:52	0.7	12:16	0.9	15:57	0.2		20:10	0.8	22:16	0.7				
	19:26	0.8	21:55	0.7					19					01:10	1.1	04:53	0.3
05	•				00:45	1.0	04:02	0.2		08:33	1.0	12:02	0.6	13:45	0.7	16:55	0.2
	08:02	1.1	11:11	0.8	13:29	1.0	16:50	0.2		20:40	1.0	23:14	0.8				
	20:26	1.1	23:04	0.9					20					02:03	1.3	05:38	0.4
06					01:51	1.4	05:11	0.3	[08:59	1.1	12:36	0.7	14:30	0.9	17:35	0.3
	08:48	1.4	12:10	0.9	14:22	1.2	17:30	0.2		21:09	1.3						
	21:06	1.5	23:58	1.2					21			00:00	0.9	02:44	1.4	06:14	0.4
07	'				02:44	1.9	06:08	0.4		09:24	1.2	13:03	0.8	15:06	1.0	18:07	0.3
	09:28	1.6	12:59	1.0		1.4	18:06	0.2		21:39	1.5						
	21:44	1.9			'				22			00:38	1.0	03:21	1.6	06:46	0.5
08	'		00:48	1.4	03:32	2.3	06:59	0.5		09:52	1.4	13:26	0.9	15:37	1.1	18:34	0.3
	10:08	1.8	13:40	1.1	15:49	1.5	18:41	0.3		22:09	1.7						
	22:23	2.3			'				23			01:12	1.1	03:54	1.8	07:17	0.5
09	'		01:38	1.5	04:17	2.5	07:46	0.5		10:20	1.5	13:48	0.9		1.2	18:58	0.3
	10:47	1.9	14:17	1.1	16:30	1.7	19:19	0.3		22:39	1.8						
	23:04	2.5			'				24			01:46	1.2	04:25	1.9	07:48	0.5
10	'		02:27	1.6	05:01	2.6	08:31	0.5		10:49	1.5	14:13	0.9	16:33	1.3	19:23	0.4
	11:26	1.8	14:51	1.2	17:10	1.7	19:59	0.4		23:08	1.9						
.	23:47	2.6			'				25			02:19	1.3	04:56	2.0	08:20	0.5
11	'		03:17	1.6	05:44	2.5	09:15	0.5		11:19	1.5	14:39	0.9	17:03	1.3	19:51	0.4
	12:07	1.7	15:23	1.1	17:52	1.7	20:42	0.4		23:37	1.9						
12	00:33	2.5	04:08	1.5	06:28	2.2	09:58	0.4	26			02:53	1.3	05:28	2.0	08:53	0.5
	12:48	1.5	15:54	1.0	18:34	1.6	21:29	0.4		11:52	1.5	15:07	0.9	17:35	1.4	20:23	0.4
13	01:21	2.2	05:01	1.4	07:13	1.8	10:42	0.3		00:08	1.9	03:28	1.3		1.9		0.4
-	13:33	1.2	16:26	0.8	19:20	1.4	22:20	0.4		12:28	1.4	15:38	0.9	18:11	1.4	21:01	0.4
14	02:15	1.8	05:59	1.2	07:59	1.4	11:28	0.2		00:41	1.7	04:05	1.2		1.7	10:02	0.4
·	14:22	1.0	17:02	0.7	20:12	1.2	23:20	0.3		13:08	1.3	16:11	0.8	18:50	1.3	21:44	0.4
15	03:22	1.4	07:07	0.9	08:49	1.0	12:22	0.1	29	01:20	1.5	04:45	1.1	07:17	1.5	10:43	0.3
	15:21	0.7	17:46	0.6	21:15	1.0	1			13:53	1.1	16:49	0.7	19:36	1.2	22:35	0.3
	10.21	011		0.0		110	-		$\begin{vmatrix} 1 & 30 \end{vmatrix}$	02:06	1.3	05:35	0.9		1.2		
										14:46		17:33				23:40	

Oktober 2010 Pos.: 61°12' N, 6°30' V

Dag	EFI	3	EFF	ζ	VFI	3	VFI	K	Dag	EF	В	EFI	K	VF	В	VF	K
	tt:mm	rák	tt:mm	rák	${ m tt:mm}$	rák	tt:mm	rák		${ m tt:mm}$	rák	${ m tt:mm}$	rák	${ m tt:mm}$	rák	$\mathrm{tt:mm}$	rák
01	03:05	1.0	06:44	0.8	09:00	0.9	12:39	0.2	16							01:58	0.3
	15:56	0.7	18:25	0.6	21:42	1.0				05:51	0.7					13:52	0.0
02							01:03	0.2		17:46	0.7	20:15	0.7	23:27	1.0		
	04:32	0.9	08:17	0.7	10:15	0.8	14:00	0.1	17							03:22	0.3
	17:30	0.7	19:30	0.7	23:05	1.1				07:03	0.7	11:13	0.5	11:57	0.5	15:09	0.1
03							02:38	0.2		19:21	0.8	21:32	0.7				
	06:30	0.9	09:53	0.7	11:46	0.8	15:13	0.1	18					00:35	1.1	04:25	0.4
	19:10	0.9	21:25	0.9						07:48	0.8	11:49	0.5	13:04	0.6	16:07	0.1
04					00:26	1.3	04:00	0.3		20:06	1.0	22:31	0.8				
	07:39	1.1	11:07	0.8	12:58	0.9	16:08	0.1	19					01:28	1.2	05:09	0.4
	20:01	1.3	22:34	1.0						08:19	0.9	12:18	0.6	13:50	0.7	16:50	0.2
05					01:31	1.7	05:04	0.4		20:39	1.2	23:16	0.9				
	08:25	1.4	11:58	0.9	13:53	1.1	16:51	0.1	20					02:11	1.4	05:44	0.4
	20:39	1.7	23:32	1.2						08:48	1.1	12:38	0.7	14:26	0.8	17:23	0.2
06					02:25	2.1	05:57	0.5		21:09	1.4	23:55	1.0				
	09:05	1.6	12:38	1.0	14:40	1.3	17:32	0.2	21					02:48	1.6	06:15	0.5
	21:18	2.0								09:18	1.3	12:54	0.8	14:58	1.0	17:52	0.3
07			00:26	1.4	03:12	2.4	06:44	0.5		21:38	1.5						
	09:43	1.7	13:13	1.1	15:24	1.5	18:13	0.2	22			00:32	1.1	03:21	1.8	06:45	0.5
	21:59	2.3								09:48	1.4	13:16	0.9	15:30	1.1	18:21	0.3
08			01:18	1.5	03:57	2.5	07:27	0.5		22:06	1.7						
	10:21	1.7	13:46	1.1	16:08	1.7	18:57	0.3	23			01:07	1.2	03:53	1.9	07:15	0.5
	22:42	2.5								10:19	1.5	13:43	0.9	16:03	1.2	18:52	0.3
09			02:11	1.6	04:40	2.4	08:08	0.4		22:35	1.8						
	11:00	1.7	14:19	1.1	16:50	1.8	19:43	0.4	24			01:44	1.2	04:26	2.0	07:46	0.4
	23:28	2.5								10:51	1.6	14:13	0.9	16:37	1.4	19:27	0.3
10			03:02	1.5	05:23	2.3	08:47	0.4		23:07	1.8		4 0		4.0		0.1
	11:41	1.7	14:54	1.1	17:33	1.8	20:32	0.4	25		4 0	02:22	1.3	04:59	1.9	08:19	0.4
11	00:16	2.3	03:54	1.4	06:05	1.9	09:25	0.3		11:27	1.6	14:45	1.0	17:14	1.5	20:06	0.4
	12:24	1.5	15:32	1.1	18:18	1.7	21:23	0.4	2.0	23:41	1.8	00.00	4 0		4 0	00 50	0 4
12	01:07	2.0	04:48	1.2	06:48	1.6	10:05	0.3	26	10.00	4.0	03:02	1.2	05:35	1.8	08:53	0.4
1.0	13:11	1.4	16:15	1.0	19:04	1.5	22:18	0.4	0.7	12:06	1.6	15:21	1.0	17:53	1.5	20:50	0.4
13	02:03	1.6		1.0	07:32	1.2	10:46	0.2	27	00:20	1.7	03:46	1.1	06:14		09:31	0.3
1 4	14:03	1.1	17:02	0.8	19:57	1.3	23:20	0.4		12:50	1.5	16:00	1.0	18:36	1.5	21:39	0.3
14	03:09	1.2	06:49	0.8		0.9	11:34	0.1	28	00:04	1.5	03:36	1.0	05:57	1.4	09:14	
	15:04	0.9	17:55	0.7	20:58	1.1	00.04	0.0		12:40	1.3	15:43	0.9	18:25	1.4	21:38	0.3
15	0.4.20	0.0	00 1 1	0.0	00.00	0.0	00:34		29	00:56	1.3	04:34	0.9	06:46	1.1	10:02	0.2
	04:29	0.9	08:14	0.6			12:34	0.1		13:38	1.1	16:33	0.9	19:23	1.3	22:48	0.3
	16:15	0.8	18:57	0.6	22:10	1.0			30	02:01	1.1	05:45	0.7	07:43	0.9	11:00	0.2
										14:48	1.0	17:30	0.9	20:31	1.3	00.10	0.0
									31	00.00	1.0	05.05	0.0	00.40	0 =	00:10	
										03:26	1.0	07:07	0.6		0.7	12:07	0.1
										16:06	1.0	18:42	0.9	21:47	1.4		

November 2010 Pos.: 61°12' N, 6°30' V

Dag	EFI	3	EFI	ζ	VFI	В	VFI	K	Dag	EF	В	EFI	K	VF	3	VFI	K
	tt:mm	rák	tt:mm	rák	tt:mm	rák	${ m tt:mm}$	rák		tt:mm	rák	${ m tt:mm}$	rák	tt:mm	rák	${ m tt:mm}$	rák
01							01:36	0.4	16							02:45	0.4
	04:55	1.0	08:35	0.7	10:02	0.7	13:14	0.1		05:43	0.7					13:48	0.1
	17:21	1.2	19:59	1.0	23:02	1.6				18:17	0.9	20:37	0.8	23:45	1.2		
02							02:50	0.4	17							03:33	0.4
	06:04	1.1	09:46	0.7	11:15	0.8	14:14	0.1		06:30	0.8	_	—	_	—	14:42	0.2
	18:20	1.4	21:07	1.1						19:00	1.1	21:26	0.9				
03					00:07	1.9	03:51	0.5	18					00:31	1.3	04:09	0.4
	06:54	1.2	10:31	0.8	12:18	0.9	15:08	0.1		07:09	0.9	11:12	0.6	12:27	0.7	15:27	0.2
	19:09	1.7	22:09	1.2						19:34	1.2	22:10	0.9				
04					01:02	2.1	04:42	0.5	19					01:11	1.5	04:41	0.4
	07:36	1.4	11:07	0.9	13:12	1.2	16:00	0.2		07:44	1.1	11:19	0.7	13:15	0.8	16:07	0.2
	19:55	2.0	23:07	1.3						20:05	1.4	22:51	1.0				
05					01:51	2.2	05:26	0.4	20					01:47	1.6	05:12	0.4
	08:16	1.5	11:39	1.0	14:02	1.4	16:52	0.2		08:17	1.3	11:45	0.8	13:57	1.0	16:46	0.2
0.0	20:40	2.2	00.04	-	00.00	2.2	0000	0 1		20:36	1.5	23:32	1.1	00.00		OF 11	0 4
06	00 50	1.0	00:04	1.4	02:36	2.2	06:06	0.4	21	00 51	1 1	10.10	0.0	02:22	1.7	05:44	
	08:56	1.6	12:15	1.1	14:48	1.6	17:44	0.3		08:51	1.4	12:16	0.9	14:37	1.2	17:27	0.3
0.7	21:27	2.3	00.50	1 4	09.00	0.1	00.49	\circ		21:08	1.6	00.15	1.0	00.50	1 0	00.17	\circ
07	09:37	1 7	00:58	1.4	03:20	2.1	06:43	0.3	22	00.00	1 C	00:15	1.2	02:58	1.8	06:17	0.3
		$\frac{1.7}{2.2}$	12:54	1.1	15:34	1.8	18:36	0.4		09:28	$\frac{1.6}{1.7}$	12:51	1.0	15:16	1.4	18:09	0.3
08	22:15	2.2	01:51	1 4	04:03	1.9	07:19	0.2	23	21:44	1.1	01:00	1.2	03:36	1.8	06:52	0.3
00	10:20	1.7	13:39	1.4	16:19	1.8	19:28	$\begin{array}{c c} 0.3 \\ \hline 0.4 \end{array}$	20	10:07	1 7	13:28	1.0	15:56	1.6	18:55	0.3
	23:05	2.0	10.09	1.4	10.13	1.0	19.20	0.4		22:24	1.8	13.20	1.0	10.00	1.0	10.00	0.5
09	25.05	2.0	02:42	1.3	04:45	17	07:56	0.3	24	22.24	1.0	01:48	1 9	04:16	1 7	07:29	0.3
	11:06	1.6	14:27	1.1	17:04	1.8	20:21	0.4	24	10:51	1.7	14:09	1 1	16:39	1.7	19:45	0.3
	23:55	1.7	11.2.	1.1	11.01	1.0	20.21	0.1		23:08	1.7	11.00	1.1	10.00	1	10.10	0.0
10	20.00	1	03:32	1.1	05:28	1.4	08:33	0.3	25	20.00	1	02:37	1.1	04:59	1.6	08:08	0.3
	11:56	1.5	15:15	1.1	17:51	1.6	21:15	0.4		11:39	1.7	14:54	1.2	17:25	1.8	20:39	0.4
11	00:48	1.4	04:22	0.9	06:12	1.1	09:13	0.2		23:56	1.6						
	12:49	1.3	16:02	1.0	18:40	1.4	22:13	0.4	26			03:30	1.0	05:44	1.4	08:50	0.3
12	01:42	1.1	05:14	0.7	06:57	0.8	09:56	0.2		12:32	1.6	15:41	1.2	18:15	1.8	21:41	0.4
	13:45	1.2	16:51	0.9	19:35	1.3	23:17	0.3	27	00:51	1.4	04:27	0.9	06:32	1.1		
13	02:40	0.8	06:13	0.5	07:45	0.6	10:44	0.1		13:28	1.5	16:32	1.1	19:12	1.7	22:50	0.4
	14:45	1.0	17:41	0.8	20:37	1.1			28	01:53	1.2	05:29	0.7	07:24	0.9	10:21	0.2
14							00:27	0.3		14:27	1.4	17:27	1.1	20:15	1.7		
	03:42	0.7	07:36	0.4	07:59	0.4	11:41	0.1	29							00:05	0.4
	15:53	0.9	18:37	0.7	21:43	1.1				03:02	1.0	06:36	0.6	08:20	0.7	11:14	0.1
15							01:40	0.3		15:28	1.4	18:28	1.1	21:24	1.7		
	04:46	0.6	_	—	_		12:45	0.1	30							01:22	0.4
	17:12	0.9	19:38	0.7	22:48	1.1		T		04:13	0.9	07:47	0.6	09:21	0.7	12:15	0.0
										16:33	1.4	19:35	1.1	22:34	1.8		

Desember 2010 Pos.: 61°12' N, 6°30' V

Dag	EFB		EFK		VFB		VFK		Dag	EFB		EFK		VFB		VFK	
	${ m tt:mm}$	rák	tt:mm		tt:mm	rák	${ m tt:mm}$			tt:mm		${ m tt:mm}$		${ m tt:mm}$		tt:mm	
01							02:33	0.4	16							02:46	0.4
	05:20	0.9	08:53	0.6	10:33	0.7	13:22	0.0		05:31	0.6	08:18	0.4	09:29	0.5	13:17	0.1
	17:42	1.5	20:45	1.1	23:40	1.8				18:10	0.9	20:30	0.8	23:42	1.2		\neg
02							03:33	0.4	17					ı		03:29	0.3
	06:18	1.0	09:43	0.7	11:45	0.8	14:31	0.1		06:25	0.7	10:00	0.5	11:08	0.5	14:26	0.1
	18:44	1.7	21:52	1.2						18:58	1.0	21:23	0.9				
03					00:38	1.9	04:23	0.4	18					00:30	1.3	04:05	0.3
	07:07	1.1	10:25	0.8	12:48	1.1	15:38	0.2		07:10	0.9	10:37	0.6	12:36	0.7	15:26	0.2
	19:40	1.9	22:56	1.2						19:36	1.2	22:14	0.9				
04					01:30	1.9	05:06	0.3	19					01:14	1.4	04:41	0.3
	07:52	1.3	11:06	0.9	13:43	1.4	16:41	0.3		07:49	1.1	11:14	0.7	13:29	0.9	16:19	0.2
	20:31	2.0	23:55	1.3						20:12	1.3	23:06	1.0				
05					02:17	1.8	05:44	0.3	20					01:56	1.5	05:17	0.3
	08:37	1.4	11:53	1.0	14:34	1.6	17:39	0.3		08:29	1.3	11:51	0.8	14:15	1.2	17:09	0.2
	21:20	2.0								20:49	1.5	23:57	1.1				
06			00:50	1.3	03:02	1.7	06:19	0.3	21					02:37	1.6	05:54	0.3
	09:21	1.6	12:43	1.1	15:21	1.8	18:34	0.4		09:10	1.5	12:31	1.0	14:58	1.5	17:58	0.2
	22:08	1.9	04.40	1 0	00.40	4.0	00 55	0.0	0.0	21:29	1.7	00.40		00.00		0.0.00	0.0
07	10.05	4 =	01:40	1.2	03:46	1.6	06:55	0.3	22	00 50	1 -	00:48	1.1	03:20	1.7	06:32	0.3
	10:07	1.7	13:33	1.2	16:06	1.9	19:25	0.4		09:53	1.7	13:14	1.1	15:41	1.8	18:49	0.3
08	22:54	1.8	00.06	1 1	04.00	1 5	07.20	0.2	23	22:13	1.8	01.20	1 1	04:02	1 7	07.00	0.4
08	10:54	1.7	02:26 $14:21$	1.1	04:28 $16:50$	1.8	07:32 20:15	$0.3 \\ 0.4$	23	10:39	1.8	01:39 13:58	1.1	16:26	2.0	07:09 19:42	$0.4 \\ 0.4$
	23:39	1.6	14:21	1.4	10:50	1.0	20:10	0.4		22:59	1.8	19:00	1.0	10:20	2.0	19:42	0.4
09	∠J.J9	1.0	03:09	1.0	05:10	1.3	08:09	0.3	24	22.99	1.0	02:29	1.1	04:46	1.6	07:47	0.4
0.9	11:42	1.7	15:06	1.1	17:34	1.7	21:03	0.3	24	11:28	1.9	14:44	1.4	17:13	2.1	20:37	0.4
10	00:22	1.4	03:51	0.8	05:52	1.1	08:47	0.3		23:48	1.7	11.11	1.1	11.10	2.1	20.01	0.1
	12:31	1.6	15:48	1.1	18:19	1.6	21:53	0.4	25	20.10	2	03:19	1.0	05:29	1.4	08:26	0.3
11	01:03	1.1	04:31	0.7	06:32	0.9	09:23	0.2		12:17	1.9	15:31	1.4	18:03	2.1	21:36	0.5
	13:18	1.4	16:29	1.0	19:06	1.4	22:46	0.4	26	00:39	1.5	04:08	0.9	06:14	1.2	09:05	0.3
12	01:46	0.9	05:09	0.5	07:09	0.6	09:57	0.2		13:07	1.9	16:20	1.4	18:56	2.1	22:39	0.5
	14:07	1.2	17:11	0.9	19:55	1.3	23:45	0.4	27	01:33	1.3	04:58	0.8	07:01	1.0	09:47	0.2
13	02:31	0.7	05:46	0.4	07:43	0.5	10:32	0.2		13:57	1.8	17:12	1.3	19:54	2.0	23:47	0.5
	14:58	1.1	17:54	0.8	20:49	1.2			28	02:29	1.1	05:47	0.6	07:52	0.8	10:34	0.1
14							00:48	0.4		14:51	1.7	18:10	1.2	20:56	1.8		
	03:23	0.6	06:23	0.3	08:15	0.4	11:14	0.1	29							00:57	0.4
	15:58	1.0	18:43	0.8	21:48	1.1				03:29	0.8	06:34	0.5	08:50	0.7	11:32	0.1
15							01:52	0.4		15:56	1.6	19:17	1.1	22:02	1.7		
	04:26	0.5	07:07	0.4	08:51	0.4	12:10	0.1	30					ı		02:08	0.4
	17:07	0.9	19:36	0.8	22:48	1.1				04:35	0.7	07:23	0.5	10:00	0.7	12:45	0.1
										17:15	1.5	20:32	1.1	23:11	1.5		
									31					ı		03:11	0.3
										05:42	0.7	08:26	0.6	11:18	0.8	14:08	0.1
										18:33	1.5	21:46	1.1				