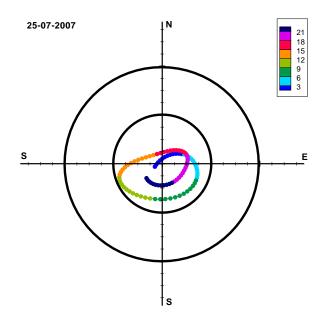


Tøknifrágreiðing

Sjóvarfalsrákið á Munkagrunninum í ár 2007

Knud Simonsen



NVD*Rit*NÁTTÚRUVÍSINDADEILDIN
Fragulty of Saignag and Taghnalogy

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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. \cdot Fax \cdot @ $+298\ 352551 \cdot +298\ 352551 \cdot \text{nvd}$ @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.

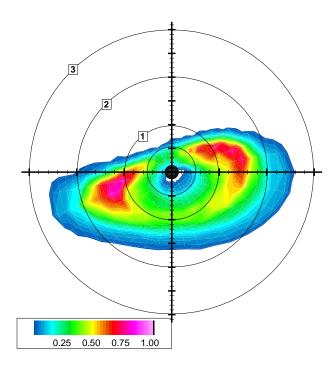
Fyrivarni

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 2007. 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.



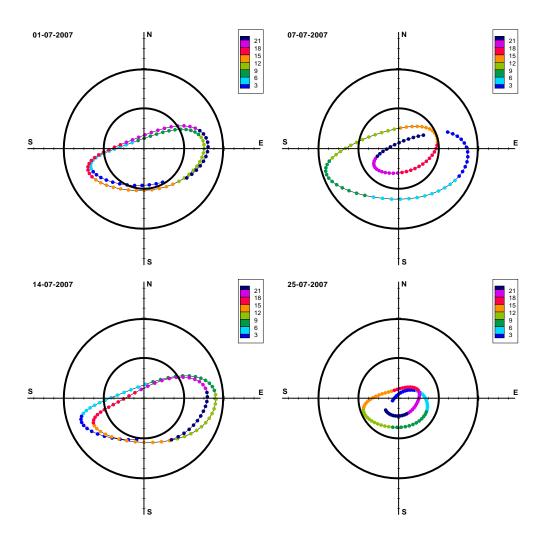
Figur 1: Streymrósa fyri Munkagrunnin 2007. Sirklarnir vísa streymferð í knob, og litirnir vísa brøkpartin (%) av einum árið, ið rákið hevur ávísa ferð og kós.

Streymellipsur

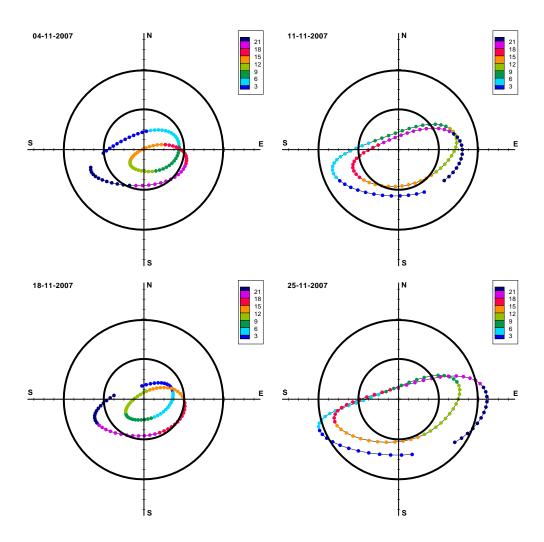
Streymurin til eina ávísa tíð kann lýsast við einum ørvi, sum vísir tann vegin, ið ráki er. Um slíkir ørvar verða teknaðir fyri fleiri tíðir, so fæst, at ørvurin ferðast eftur einum sindur fløtum sirkli, sum nevnist ein ellipsa.

Her á okkara leiðum er sjóvarfallið í stóran mun hálvdagligt, t.v.s. at tað fløðir og fjarðar tvær ferðir um døgni. Fyri streymin merkir hetta, at ørvurin skal ferðast runt tveimum ellipsum um dagin. 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 kunnu verða rættuliga ymisk.

Serliga á sunnaru leiðunum á landgrunninum tykist tað dagliga sjóvarfalli eisini at hava týðning. Um vit bert høvdu dagligt sjóvarfall, so hevði fløtt og fjarða bert einaferð í einum samdøgni. 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 eru hetta víst við sjóvarfals ellipsum á Munkagrunninum fyri nakrar dagar í 2007.



Figur 2: Sjóvarfalsellipsur á Munkagrunninum fyri fýra dagar í juli mánaða í 2007. Litirnir vísa klokkutíðirnar. Fyrsta tíðin er kl $00^{15},~\rm og$ litirnir skifta hvønn triða tíma (GMT). Millum hvønn runda blettin er 15 minuttir. Sirklarnir vísa streymferðir uppá ávikavist 1 og 2 knob.

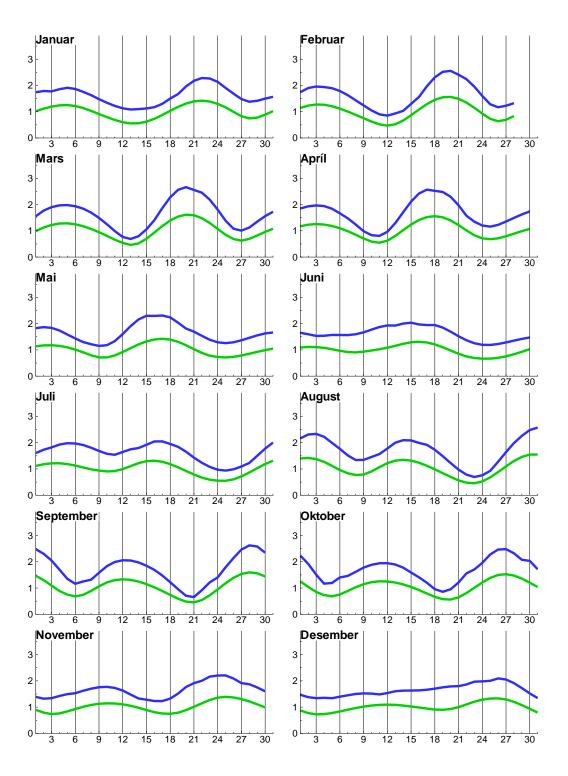


Figur 3: Sjóvarfalsellipsur á Munkagrunninum fyri fýra dagar í november mánaða í 2007. Litirnir vísa klokkutíðirnar. Fyrsta tíðin er kl $00^{15},~\rm og~litirnir$ skifta hvønn triða tíma (GMT). Millum hvønn runda blettin er 15 minuttir. Sirklarnir vísa streymferðir uppá ávikavist 1 og 2 knob.

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 (fjórðingar um tíman). Av tí at útrokningarnar eru grundaðar á mátingar, eigur ikki at verða roknað við nakrari seinking í streyminum í mun til kurvurnar.





Figur 4: Streymkurva fyri Munkagrunnin 2007. 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. T.d. tann 04. november í 2007 er eystfalsbroddur kl 03:30. Streymellipsan á mynd 3 vísir, at eftir hetta minkar styrkin í rákinum, meðan tað snarar við klokkuni fyrst ein sunnan og síðani í ein vestan til tað er heilt kyrt klokkan 11:22. Henda dagin er eitt vestfall aftaná eystfalsbroddin um náttina, men tað er eingin kyrrindir ella broddur sum so á hesum staðnum. Kortini er ein klokkutíð ásett fyri henda broddin til at verða, tá rákið er vestureftur sambart ellipsuni, meðan eingin klokkutíðir er ásett fyri kyrrindini. Hesar støðurnar eru merktar við strikum í talvunum.

Í tíðarskeiðinum frá 25 mars til 28 oktober, 2007, 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 omanfyri. Hóast roknaða rákið ikki ir aldandi 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 2007 Pos.: 61°12' N, 6°30' V

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

Pos.: 61°12' N, 6°30' V Februar 2007

Dag	EFI	3	EFF	(VFI	3	VFI	Κ	Dag	EF	В	EFF	ζ	VFI	3	VFI	<u>C</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			00:32	1.0	02:25	1.2	05:36	0.2	16					02:00	1.3	05:16	0.3
	08:56	1.4	12:04	1.1	14:46	1.7	18:13	0.4		08:39	1.4	11:41	1.0	14:17	1.6	17:31	0.3
	21:40	1.6								21:02	1.6						
02			01:12	1.0	03:09	1.3	06:11	0.3	17			00:22	1.0		1.4		0.3
		1.7	12:54	1.2	15:29	1.9	18:57	0.4			1.7	12:25	1.2	15:01	2.0	18:20	0.4
	22:14	1.6								21:40	1.8						
03			01:46	1.0	03:49	1.3	06:46	0.3	18			01:07	1.1	03:23	1.6	06:22	0.3
		1.9	13:39	1.3	16:09	2.0	19:38	0.5		10:00	2.1	13:10	1.4	15:45	2.3	19:09	0.5
0.4	22:46	1.5	00.4-	0.0	0.4.00	4.0	0- 00	0.4	4.0	22:20	1.9	04 50		0.4.00	4.0	00 54	0.4
04	11.01	1.0	02:17	0.9	04:26	1.3	07:20	0.4	19	10.40	0.0	01:50	1.1		1.6	06:54	0.4
		1.9	14:19	1.3	16:47	1.9	20:16	0.5		10:40	2.3	13:54	1.6	16:29	2.5	19:58	0.6
O.F	23:17	1.4	00.46	0.0	05.00	1.0	07.51	0.4	20	23:01	1.8	00.20	1 1	04.41	1 6	07.00	0.4
05	11:39	1.9	02:46 $14:55$	0.9 1.2	05:00 $17:24$	1.2 1.9	07:51 20:55	$0.4 \\ 0.5$	20	11:20	2.4	02:30 $14:39$	1.1	04:41 17:14	1.6 2.6	07:28 20:48	$0.4 \\ 0.6$
		1.3	14:55	1.2	17:24	1.9	20:00	0.5		23:44	1.7	14:39	1.0	17:14	2.0	20:46	0.0
06	20.49	1.0	03:12	0.7	05:30	1.1	08:18	0.3	21	20.44	1.1	03:07	1.0	05:20	1.5	08:04	0.3
00	12:15	1.8	15:29	1.2	18:00	1.1	21:35	$0.5 \\ 0.5$	41	12:01	2.4	15:26	1.5	18:00	$\frac{1.5}{2.4}$	21:39	0.5
07	00:20	1.1	03:34	0.6	05:56	0.9	08:40	0.3	$ $ $_{22}$ $ $	00:28	1.5	03:40	0.9	06:01	1.3	08:43	0.3
	12:48	1.6	16:03	1.1	18:36	1.6	22:19	0.4		12:45	$\frac{1.5}{2.2}$	16:16	1.4	18:48	2.1	22:33	0.4
08	00:52	0.9	03:56	0.5	06:21	0.7	09:03	0.2	23	01:13	1.1	04:06	0.7	06:45	1.2	09:28	0.3
	13:19	1.4	16:36	1.0	19:13	1.4	23:05	0.4		13:35	2.0	17:14	1.2	19:39	1.7	23:30	0.3
09	01:27	0.7	04:20	0.4	06:50	0.6	09:31	0.2	24	02:02	0.8	04:31	0.5	07:37	1.0	10:23	0.2
	13:50	1.2	17:10	0.9	19:52	1.2	23:56	0.3		14:36	1.6	18:26	1.1	20:35	1.3		
10	02:09	0.6	04:54	0.3	07:28	0.5	10:10	0.1	25							00:38	0.2
	14:28	1.0	17:47	0.8	20:38	1.0				03:00	0.5	05:06	0.4	08:43	0.8	11:38	0.2
11							00:51	0.2		16:10	1.3	20:00	0.9	21:44	1.0		
	03:05	0.4	05:44	0.2	08:22	0.4	11:09	0.1	26							01:58	0.1
	15:29	0.8	18:30	0.7	21:36	0.9				04:18	0.4	05:54	0.3	10:08	0.8	13:22	0.2
12							01:53	0.2		18:11	1.2	21:45	0.8	23:09	0.8		
	04:24		06:52	0.3	09:38	0.4	12:37	0.1	27							03:09	0.1
	18:34	0.7	20:03	0.7	22:58	0.9				06:00	0.5			11:39	1.0	15:07	0.3
13							02:57	0.1		19:28	1.2	22:57	0.8				
	05:56				11:20	0.5	14:19	0.1	28					00:26			
	19:21	0.8	21:32	0.7						07:53		09:51	0.8	12:52	1.3	16:24	0.3
14							03:53	0.2		20:16	1.3	23:45	0.8				
	07:04			0.5	12:36	0.8	15:38	0.1									
	19:54	1.0	22:38	0.8	04.30		0.4.22	0.0									
15	0= ==	4.0	10 ==	0.0	01:12		04:38	0.2									
		1.0	10:55	0.8	13:31	1.1	16:39	0.2									
	20:27	1.3	23:33	0.9													

Mars 2007 Pos.: 61°12' N, 6°30' V

Dag	EF	В	EFF	ζ	VFI	3	VFI	K	Dag	EF	В	EFF	ζ	VFI	3	VFI	Κ
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01					01:25	0.9	04:39	0.2	16					00:53	1.0	04:10	0.2
	08:15	1.2	10:56	0.9	13:46	1.6	17:19	0.4		07:47	1.1	10:24	0.9	13:11	1.4	16:31	0.3
	20:49	1.4								20:06	1.4	23:25	0.9				
02			00:21	0.9	02:12	1.1	05:15	0.2	17					01:40	1.2	04:46	0.3
	08:48	1.5	11:48	1.1	14:30	1.8	18:01	0.5		08:23	1.5	11:13	1.1	13:59	1.9	17:21	0.4
	21:15	1.5								20:41	1.6						
03			00:50	0.9	02:52	1.2	05:50	0.3	18			00:10	1.0	02:21	1.4	05:18	0.3
	09:23	1.8	12:33	1.2	15:09	1.9	18:37	0.5		08:57	1.9	11:59	1.4	14:43	2.3	18:08	0.5
	21:42	1.5								21:18	1.8						
04			01:17	0.9	03:27	1.3	06:23	0.4	19			00:50		02:59	1.5	05:50	0.3
	09:59	1.9	13:12	1.3	15:45	2.0	19:11	0.5		09:33	2.3	12:44	1.5	15:26	2.6	18:54	0.6
	22:11	1.5								21:56	1.9						
05			01:42	0.9	03:59	1.3	06:53	0.4	20			01:27	1.1	03:38	1.6	06:24	0.3
	10:33	2.0	13:48	1.3	16:19	2.0	19:44	0.5		10:11	2.5	13:30	1.6	16:09	2.7	19:39	0.6
	22:41	1.5								22:36	1.8						
06			02:07	0.9	04:28	1.3	07:19	0.4	21			02:01	1.1	04:17	1.7	07:01	0.3
	11:06	1.9	14:20	1.3	16:52	1.9	20:19	0.5		10:51	2.6	14:18	1.6	16:52	2.6	20:24	0.5
	23:11	1.4								23:16	1.7						
07			02:31	0.8	04:54	1.2	07:42	0.3	22			02:32	1.1	04:57	1.6	07:42	0.4
	11:36	1.8	14:52	1.3	17:24	1.8	20:55	0.5		11:35	2.5	15:09	1.5	17:35	2.3	21:09	0.4
	23:42	1.2								23:58	1.4						
08			02:53	0.7	05:19	1.0	08:06	0.3	23			02:59	1.0	05:40	1.5	08:28	0.4
	12:05	1.7	15:23	1.2	17:55	1.7	21:31	0.4		12:22	2.2	16:05	1.3	18:21	1.8	21:55	0.3
09	00:14	1.1	03:15	0.6	05:47	0.9	08:33	0.3	24	00:43	1.1	03:25	0.8	06:26	1.4	09:21	0.3
	12:32	1.5	15:55	1.1	18:28	1.5	22:09	0.4		13:17	1.8	17:10	1.1	19:08	1.4	22:45	0.2
10	00:50	0.9	03:42	0.5	06:19	0.8	09:08	0.3	25	02:34	0.8	04:56	0.6	08:21	1.2	11:27	0.3
	13:02	1.2	16:28	0.9	19:03	1.2	22:49	0.3		15:32	1.4	19:34	0.9	20:58	1.0		
11	01:32	0.7	04:16	0.4	07:01	0.7	09:54	0.2	26							00:46	0.0
	13:41	1.0	17:05	0.8	19:44	1.0	23:39	0.2		03:39	0.6	05:38	0.5	09:31	1.0	12:56	0.2
12	02:25	0.6	05:02	0.4	07:59	0.6	10:58	0.1		17:28	1.1			22:00	0.6		
	14:38	0.8	17:53	0.7	20:38	0.8			27							02:06	0.0
13							00:49	0.1		05:11	0.5		_	11:00	1.0	14:44	0.3
	03:38	0.4	06:05	0.3		0.5	12:31	0.1		19:13	1.0		_	23:45	0.5		
	18:02	0.6	19:54	0.6	22:07	0.7			28							03:25	0.0
14								0.1		08:11		09:05	0.7	12:28	1.1	16:17	0.3
	05:28	0.5		0.4	10:56	0.7	14:15	0.1		20:19	1.1						
	18:57	0.8	21:29	0.7	23:50	0.8			29					01:06	0.7		0.1
15							03:24				1.0	10:34	0.8	13:35	1.3	17:19	0.4
	07:01	0.7	09:26	0.7	12:15	1.0	15:32	0.2		20:55	1.2						
	19:32	1.1	22:34	0.8					30					02:06	0.8	05:10	0.2
										08:56	1.3	11:33	0.9	14:25	1.6	18:03	0.5
										21:17	1.3						
									31					02:50	1.0		0.2
											1.5	12:21	1.1	15:05	1.7	18:38	0.5
									1	21.41	1 1						

21:41 1.4

Apríl 2007 Pos.: $61^{\circ}12' \text{ N}, 6^{\circ}30' \text{ V}$

Dag	EFI	В	EFF	<	VFI	3	VFI	Κ.	Dag	\mathbf{EFI}	В	EFF	<	VFI	3	VFI	K
	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			01:22	0.9	03:26	1.1	06:22	0.3	16			00:52	1.0	02:50	1.2	05:39	0.2
	09:59	1.7	13:02	1.2	15:42	1.8	19:09	0.5		09:26	2.0	12:30	1.4	15:21	2.4	18:52	0.5
	22:08	1.4								21:53	1.7						
02			01:45	0.9	03:58	1.2	06:53	0.3	17			01:26	1.1	03:32	1.4	06:16	0.2
	10:30	1.8	13:38	1.2	16:16	1.9	19:40	0.5		10:04	2.3	13:20	1.5	16:05	2.6	19:35	0.5
	22:37	1.5								22:30	1.8						
03			02:08	0.9	04:27	1.2	07:20	0.3	18			01:57	1.1	04:14	1.6	06:57	0.3
	11:01	1.9	14:11	1.3	16:48	2.0	20:11	0.5		10:45	2.5	14:11	1.6	16:47	2.5	20:17	0.4
	23:07	1.5								23:09	1.7						
04			02:33	0.9	04:54	1.2	07:44	0.3	19			02:27	1.1	04:56	1.7	07:42	0.3
	11:31	1.9	14:43	1.3	17:19	1.9	20:43	0.5		11:29	2.5	15:04	1.5	17:30	2.3	20:57	0.4
	23:38	1.5								23:50	1.6						
05			02:58	0.9	05:21	1.2	08:10	0.3	20			02:58	1.1	05:39	1.7	08:31	0.4
	11:59	1.8	15:15	1.2	17:49	1.8	21:15	0.5		12:18	2.3	16:00	1.4	18:13	1.9	21:37	0.3
06	00:10	1.4	03:23	0.8	05:51	1.2	08:40	0.3	21	00:34	1.4	03:32	1.0	06:24	1.7	09:26	0.4
	12:27	1.7	15:48	1.2	18:20	1.7	21:47	0.4		13:11	2.0	17:00	1.2	18:57	1.5	22:17	0.2
07	00:45	1.2	03:49	0.8	06:24	1.1	09:15	0.3	22	01:23	1.2	04:11	0.9	07:14	1.5	10:28	0.4
	12:58	1.5	16:22	1.0	18:52	1.4	22:19	0.3		14:15	1.6	18:09	1.0	19:42	1.1	23:00	0.1
08	01:23	1.1	04:20	0.7	07:02	1.1	09:59	0.3	23	02:21	1.0	05:00	0.8	08:13	1.3	11:42	0.3
	13:33	1.2	17:01	0.9	19:28	1.2	22:57	0.2		15:40	1.2	19:39	0.7	20:24	0.7	23:53	0.0
09	02:08	0.9	04:58	0.6	07:48	1.0	10:54	0.2	24	03:32	0.9	06:03	0.7	09:24	1.2	13:11	0.3
	14:18	1.0	17:49	0.7	20:11	0.9	23:46	0.2		17:14	0.9			21:75	0.5		
10	03:04	0.7	05:46	0.5	08:48	0.8	12:05	0.2	25							01:03	0.0
	15:22	0.8	19:03	0.6	21:09	0.7				04:58	0.8	07:25	0.7	10:45	1.2	14:45	0.3
11							00:57	0.1		18:40	0.9			23:25	0.4		
	04:22	0.6	06:45	0.5	10:04	0.8	13:37	0.2	26							02:25	0.0
	17:36	0.7	20:46	0.6	22:33	0.6				06:43	0.9	08:54	0.8	12:02	1.2	16:04	0.4
12							02:26	0.1		19:40	0.9	23:43	0.5				
	06:14	0.7	08:10	0.6	11:32	1.0	15:10	0.2	27					00:27	0.5	03:34	0.1
	19:11	0.8	22:20	0.6						07:44	1.0	10:05	0.8	13:05	1.4	16:57	0.5
13					00:14	0.7	03:37	0.2		20:10	1.0						
	07:42	0.9	09:50	0.8	12:49	1.3	16:22	0.3	28			00:07	0.6	01:31	0.7	04:28	0.1
	19:59	1.1	23:25	0.8						08:24	1.2	11:00	0.9	13:54	1.5	17:36	0.5
14					01:19	0.9	04:25	0.2		20:36	1.1						
	08:20	1.3	10:50	1.1	13:48	1.7	17:18	0.5	29			00:33	0.7	02:15	0.8	05:11	0.2
	20:38	1.4								08:58	1.4	11:45	1.0	14:35	1.6	18:09	0.5
15			00:12	0.9	02:07	1.1	05:03	0.2		21:05	1.2						
	08:52	1.7	11:41	1.3	14:37	2.1	18:07	0.5	30			00:55	0.8	02:50	0.9	05:46	0.3
	21:15	1.6								09:29	1.5	12:24	1.1	15:11	1.7	18:39	0.5
										21:35	1.3						

Mai 2007 Pos.: 61°12' N, 6°30' V

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

Juni 2007 Pos.: 61°12' N, 6°30' V

Dag	EFI	3	EFF	C	VFI	3	VFI	K	Dag	EFI	3	EFF	ζ	VFI	3	VFI	K
	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			01:40	0.8	03:58	1.1	06:51	0.3	16			01:44	1.1	04:29	1.8	07:40	0.3
	10:35	1.5	13:41	1.1	16:20	1.7	19:37	0.3		11:18	2.0	14:58	1.2	16:57	1.6	20:07	0.2
	22:47	1.5								23:20	1.6						
02			02:10	0.9	04:35	1.3	07:31	0.3	17			02:37	1.2	05:17	1.9	08:38	0.4
	11:07	1.6	14:23	1.1	16:54	1.6	20:08	0.3		12:11	1.8	15:50	1.1	17:41	1.4	20:43	0.2
	23:25	1.5							18	00:12	1.7	03:30	1.2	06:06	1.9	09:35	0.4
03			02:43	0.9	05:13	1.4	08:15	0.3		13:02	1.6	16:37	0.9	18:26	1.2	21:20	0.2
	11:43	1.5	15:06	1.1	17:31	1.5	20:42	0.3	19	01:06	1.7	04:21	1.2	06:55	1.9	10:32	0.5
04	00:07	1.5	03:22	1.0	05:53	1.5	09:03	0.3		13:50	1.3	17:22	0.8	19:10	1.0	22:00	0.2
	12:24	1.5	15:51	1.0	18:11	1.4	21:18	0.3	20	01:58	1.6	05:10	1.1	07:46	1.7	11:29	0.4
05	00:54	1.5	04:06	1.0	06:38	1.6	09:57	0.3		14:36	1.1	18:05	0.6	19:56	0.8	22:41	0.2
	13:10	1.3	16:39	0.9	18:54	1.2	21:58	0.3	21	02:50	1.5	05:58	1.0	08:39	1.5	12:28	0.4
06	01:48	1.5	04:54	1.1	07:28	1.6	10:59	0.4		15:20	0.8	18:46	0.5	20:41	0.6	23:22	0.1
	14:02	1.2	17:33	0.7	19:42	1.0	22:42	0.3	22	03:43	1.3	06:47	0.9	09:34	1.4	13:30	0.4
07	02:45	1.4	05:45	1.1	08:26	1.6	12:07	0.4		16:09	0.7	19:23	0.4	21:19	0.4		
	15:04	1.0	18:35	0.6	20:35	0.8	23:31	0.2	23							00:06	0.1
08	03:44	1.4	06:39	1.1	09:30	1.6	13:22	0.4		04:42	1.1	07:37	0.9	10:31	1.3	14:35	0.4
	16:13	0.9	19:46	0.6	21:30	0.7				17:05	0.6	19:56	0.4	21:40	0.4		
09							00:24	0.1	24							00:58	0.1
	04:44	1.3	07:37	1.1	10:38	1.7	14:38	0.5		05:51	1.0	08:30	0.8	11:31	1.2	15:37	0.4
	17:27	0.9	21:07	0.6	22:25	0.6				18:07	0.6	20:34	0.4	22:01	0.4		
10							01:22	0.0	25							01:59	0.1
	05:44	1.4	08:40	1.1	11:46	1.8	15:46	0.5		07:01	1.0	09:25	0.8	12:29	1.2	16:26	0.4
	18:34	0.9	22:22	0.6	23:32	0.7				19:06	0.6	21:45	0.5	23:45	0.4		
11							02:24	0.0	26							03:06	0.1
	06:45	1.5	09:46	1.2	12:50	1.9	16:44	0.4		07:55	1.0	10:16	0.8	13:20	1.2	17:04	0.3
4.0	19:30	1.0	23:06	0.7		0.0		0 1		19:56	0.8			0.4.00			
12	0= 40		40 - 0	4.0	00:48	0.8	03:28	0.1	27	00.00	4.0	44.00	0.0	01:00	0.5	04:10	0.1
	07:43	1.7	10:52	1.2	13:47	1.9	17:34	0.4		08:38	1.0	11:05	0.9	14:04	1.3	17:37	0.3
1.0	20:18	1.1	23:39	0.8	01.50	1.0	0.4.00	0.1	20	20:37	0.9	00.45	0.0	00.00	0 =	05.04	0.0
13	00.00	1.0	44 25	1.0	01:52	1.0	04:33	0.1	28	00.14	4 4	00:17	0.6	02:08	0.7	05:04	0.2
	08:38	1.9	11:57	1.3	14:38	1.9	18:17	0.3		09:14	1.1	11:52	0.9	14:44	1.4	18:09	0.3
1.4	21:02	1.2	00.10	0.0	00.40	1.0	05.05	0.0	00	21:14	1.1	00.40	0.7	00 55	0.0	05 50	0.0
14	00.21	2.0		0.9	02:49 15:26	1.3	05:37	0.2	29	00.46	1.0		0.7	02:57	0.9	05:52	0.2
		2.0	13:01	1.3	15:20	1.9	18:56	0.3		09:46		12:38	1.0	15:21	1.4	18:40	0.3
15	21:46	1.4	00.55	1.0	03:40	1.6	06.40	0.2	90	21:50	1.3	01.14	0.9	09,90	1.0	06:36	0.0
15	10.05	2.0	00:55	1.0		1.6	06:40	0.3	30	10.10	1.4	01:14			1.2		0.2
	10:25	2.0	14:02	1.3	16:12	1.7	19:32	0.2		10:19	1.4	13:24	1.0	15:58	1.5	19:13	0.3
	22:32	1.5								22:29	1.4						

Juli 2007 Pos.: 61°12' N, 6°30' V

Dag	EFI	3	EFK	<u> </u>	VFI	3	VFI	Κ	Dag	EFI	В	EFK		VFI	3	VFI	X
	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			01:49	0.9	04:17	1.4	07:21	0.2	16			02:33	1.3	05:07	2.1	08:37	0.5
	10:53	1.5	14:09	1.0	16:37	1.5	19:47	0.3		11:57	1.7	15:30	1.0	17:28	1.3	20:23	0.3
	23:11	1.6							17	00:02	1.9	03:21	1.3	05:52	2.1	09:24	0.5
02			02:29	1.1	04:57	1.6	08:08	0.3		12:35	1.5	16:06	0.9	18:08	1.2	21:00	0.3
	11:31	1.6	14:54	1.0	17:16	1.5	20:21	0.3	18	00:48	1.9	04:06	1.3	06:35	2.0	10:10	0.5
	23:56	1.7								13:12	1.4	16:39	0.8	18:47	1.1	21:35	0.3
03			03:11	1.2	05:40	1.8	08:58	0.3	19	01:32	1.8	04:48	1.2	07:18	1.8	10:56	0.4
	12:13	1.6	15:39	1.0	17:58	1.4	20:57	0.4		13:48	1.1	17:09	0.6	19:23	0.9	22:08	0.3
04	00:44	1.8	03:56	1.3	06:25	1.9	09:52	0.4	20	02:14	1.7	05:28	1.1	08:02	1.6	11:44	0.4
_	12:58	1.5	16:25	0.9	18:40	1.3	21:34	0.4		14:24	0.9	17:35	0.5	19:57	0.7	22:38	0.2
05	01:32	1.9	04:42	1.3	07:14	2.0	10:50	0.5	21	02:56	1.4	06:08	1.0	08:46	1.4	12:36	0.4
	13:48	1.4	17:13	0.8	19:23	1.1	22:12	0.3		15:03	0.7	18:03	0.3	20:28	0.5	23:07	0.1
06	02:19	1.8	05:28	1.3	08:07	2.0	11:52	0.5	22	03:40	1.2	06:48	0.9	09:33	1.2	13:34	0.3
	14:41	1.2	18:04	0.7	20:08	0.9	22:52	0.2		15:48	0.5	18:37	0.2	21:03	0.4	23:44	0.1
07	03:07	1.7	06:17	1.3	09:04	1.9	13:00	0.5	23	04:35	1.0	07:32	0.8	10:26	1.1	14:37	0.3
0.0	15:38	1.0	18:57	0.6	20:57	0.8	23:36	0.1	0.4	16:48	0.4	19:21	0.2	21:44	0.4	00.00	0.0
08	03:57	1.6	07:12	1.2	10:05	1.8	14:11	0.4	24	00.04	0.0	00.05	0.0	11.00	1.0	00:39	0.0
00	16:40	0.8	19:48	0.5	21:52	0.6	00.90	0.1		06:04	0.8	08:25	0.8	11:29	1.0	15:36	0.2
09	04.56	1 5	00.16	1 1	11.11	1 7	00:30	0.1	25	18:08	0.4	20:16	0.3	22:29	0.4	01.57	0.1
	04:56	$\begin{array}{c} 1.5 \\ 0.7 \end{array}$	08:16 20:39	1.1 0.5	11:11 23:01	1.7	15:21	0.3	25	07:35	0.8	09:32	0.7	12:34	0.9	01:57	$0.1 \\ 0.2$
10	17:47	0.7	20:59	0.5	23:01	0.6	01:39	0.0		19:19	$0.5 \\ 0.5$		0.7 0.4	12:34	0.9	16:24	0.2
10	06:09	1.5	09:31	1.1	12:21	1.6		0.0	26	19.19	0.0	22.23	0.4	00:12	0.5	03:29	0.1
		0.7	21:39	0.5	12.21	1.0	10.20	0.5	20	08:28	0.8	10:38	0.7	13:30	1.0	17:06	$0.1 \\ 0.2$
11	10.04	0.1	21.00	0.0	00:22	0.7	03:03	0.1		20:12	0.7	23:28	0.5	10.00	1.0	11.00	0.2
	07:30	1.5	10:50	1.1	13:26	1.5	17:18	0.3	27	20.12	0.1	20.20	0.0	01:45	0.7	04:43	0.1
	19:53	0.8	22:44	0.6	10.20	1.0	11.10	0.0	-	09:03	1.0	11:35	0.8	14:18	1.1	17:43	0.2
12	10.00				01:35	1.0	04:28	0.2		20:55	1.0	11.00				220	0.2
	08:39	1.6	12:03	1.1			18:01	0.2	28			00:08	0.7	02:36	0.9	05:38	0.2
		1.0	23:45	0.8						09:34	1.2	12:26	0.9	15:01	1.2	18:19	0.3
13					02:38	1.3	05:43	0.2		21:35	1.2						
	09:38	1.7	13:09	1.1	15:14	1.4	18:37	0.2	29			00:48	0.8	03:19	1.3	06:26	0.2
	21:37									10:05	1.4	13:13	1.0	15:42	1.4	18:53	0.3
14			00:44	1.0	03:32	1.7	06:48	0.3		22:16	1.5						
	10:29	1.8	14:04	1.1	16:01	1.4	19:12	0.2	30			01:29	1.0	04:00	1.6	07:13	0.3
	22:26	1.6								10:39	1.5	13:57	1.0	16:22	1.5	19:26	0.3
15			01:40	1.2	04:21	1.9	07:45	0.4		22:59	1.8						
	11:15	1.8	14:50	1.1	16:45	1.4	19:46	0.3	31			02:11	1.2	04:42	1.9	08:00	0.4
	23:14	1.8								11:16	1.7	14:40	1.0	17:01	1.5	19:59	0.4
								•		23:41	2.0						

August 2007 Pos.: 61°12' N, 6°30' V

Dag	EFI	В	EFF	<u> </u>	VFI	В	VFI	K	Dag	EFI	В	EFF	<u> </u>	VFI	3	VFI	Κ
	tt:mm	rák	tt:mm	rák	${ m tt:mm}$	rák	${ m tt:mm}$	rák		tt:mm	rák	tt:mm	rák	${ m tt:mm}$	rák	tt:mm	rák
01			02:54	1.4	05:24	2.2	08:48	0.5	16	00:22	2.1	03:41	1.3	06:08	2.0	09:38	0.5
	11:56	1.7	15:23	1.0	17:40	1.5	20:32	0.4		12:32	1.4	15:55	0.8	18:17	1.2	21:06	0.4
02	00:23	2.2	03:37	1.5	06:08	2.3	09:39	0.5	17	00:59	1.9	04:17	1.3	06:45	1.8	10:17	0.5
	12:40	1.7	16:05	1.0	18:19	1.4	21:06	0.4		13:05	1.2	16:20	0.7	18:46	1.0	21:33	0.3
03	01:04	2.2	04:20	1.5	06:55	2.3	10:32	0.6	18	01:34	1.7	04:51	1.2	07:21	1.7	10:57	0.4
	13:26	1.5	16:46	0.9	18:59	1.3	21:42	0.3		13:38	1.0	16:43	0.6	19:12	0.8	21:58	0.3
04	01:46	2.2	05:05	1.5	07:43	2.2	11:28	0.5	19	02:06	1.5	05:25	1.1	07:57	1.4	11:41	0.4
	14:13	1.3	17:25	0.8	19:41	1.1	22:21	0.3		14:13	0.8	17:06	0.4	19:39	0.7	22:25	0.2
05	02:30	2.0	05:55	1.3	08:35	2.0	12:29	0.4	20	02:37	1.2	05:59	0.9	08:33	1.2	12:28	0.3
	15:03	1.0	17:59	0.6	20:28	0.9	23:06	0.2		14:52	0.6	17:35	0.3	20:13	0.5	23:01	0.1
06	03:20	1.8	06:54	1.2	09:32	1.7	13:36	0.3	21	03:11	1.0	06:36	0.8	09:13	1.0	13:22	0.2
	15:58	0.7	18:30	0.5	21:25	0.8				15:42	0.4	18:16	0.3	21:02	0.4	23:55	0.1
07							00:03	0.1	22	04:07	0.7	07:22	0.7	10:03	0.8	14:24	0.2
	04:25	1.5	08:08	1.1	10:37	1.4	14:51	0.2		16:55	0.4	19:15	0.2	22:13	0.4		
	17:04	0.5	19:12	0.4	22:38	0.7			23							01:20	0.1
08							01:24	0.1		07:36	0.6	08:56	0.6	11:25	0.7	15:34	0.1
	06:01	1.3	09:39	1.0	11:54	1.2	16:05	0.2		18:35	0.4	20:41	0.4	23:57	0.5		
	18:25	0.5	20:06	0.4					24							03:08	0.1
09					00:06	0.8	03:07	0.1		08:20	0.7	10:24	0.7	12:55	0.8	16:33	0.2
	07:46	1.3	11:09	0.9	13:10	1.1	17:01	0.2		19:53	0.6	22:39	0.5				
	19:47	0.7	21:55	0.6					25					01:20	0.7	04:30	0.1
10					01:28	1.1	04:42	0.2		08:49	0.9	11:25	0.7	13:55	0.9	17:18	0.2
	08:54	1.5	12:21	0.9	14:12	1.1	17:42	0.2		20:44	0.9	23:35	0.7				
	20:51	1.0	23:35	0.9					26					02:14	1.1	05:27	0.2
11					02:32	1.5		0.3		09:15	1.1	12:15	0.8	14:42	1.1	17:55	0.3
	09:44	1.6	13:14	1.0	15:04	1.2	18:17	0.2		21:24	1.3						
	21:38	1.4			ı				27			00:21	0.9	02:59	1.5	06:15	0.3
12			00:37	1.1	03:24	1.8	06:52	0.4		09:45	1.4	13:00	0.9	15:23	1.3	18:28	0.3
	10:22	1.6	13:55	1.0	15:49	1.3	18:51	0.2		22:02	1.6						
	22:20	1.7			1				28			01:04	1.2	03:42	1.9	07:01	0.4
13			01:30	1.2	04:09	2.0	07:39	0.5		10:19	1.6	13:42	1.0	16:02	1.5	18:59	0.3
	10:55	1.7	14:29	1.0	16:30	1.3	19:26	0.3		22:39	2.0						
	23:02	2.0			1				29					04:23			
14					04:51	2.1	08:21	0.5		10:56		14:23	1.1	16:39	1.6	19:31	0.4
		1.6	15:00	1.0	17:08	1.4	20:02	0.3		23:16	2.3			0 0	0		
	23:42	2.1		4 5	l a = a =				30		4.0		1.5			08:32	
15	10.00	4			05:30	2.1	09:00	0.5			1.8	15:02	1.1	17:17	1.6	20:04	0.4
	12:00	1.5	15:29	0.9	17:44	1.3	20:36	0.4	6.1	23:54	2.4	00.10	1.0	0 5 40	0.0	00.10	0.0
									31	10.15	1.0	03:12	1.6	05:48	2.6	09:19	0.6
										12:17	1.8	15:39	1.1	17:55	1.6	20:39	0.4

Pos.: 61°12' N, 6°30' V

September 2007

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

Dag	EFI	3	EFF	<u> </u>	VFI	3	VFF	ζ
	tt:mm	rák	tt:mm	rák	${ m tt:mm}$	rák	${ m tt:mm}$	rák
01	00:34	2.4	03:57	1.6	06:32	2.5	10:07	0.5
	12:59	1.6	16:13	1.0	18:35	1.5	21:17	0.4
02	01:15	2.3	04:46	1.5	07:18	2.2	10:57	0.4
	13:44	1.3	16:42	0.8	19:18	1.3	22:01	0.3
03	02:02	2.0	05:41	1.3	08:06	1.8	11:51	0.3
	14:31	1.0	17:07	0.6	20:06	1.1	22:53	0.3
04	02:58	1.7	06:50	1.1	08:59	1.4	12:54	0.2
	15:26	0.7	17:38	0.5	21:07	0.9		
05							00:02	0.2
	04:18	1.4	08:20	0.9	10:02	1.0	14:12	0.1
	16:37	0.5	18:22	0.4	22:26	0.9		
06							01:40	0.2
	06:27	1.2	10:15	0.8	11:24	0.8	15:33	0.1
	18:25	0.5	19:02	0.5				
07					00:00	1.0	03:30	0.2
	08:00	1.2	11:37	0.8	12:52	0.8	16:32	0.1
	20:43	0.8	22:09	0.7				
08					01:21	1.3	04:57	0.3
	08:55	1.3	12:28	0.8	13:58	0.9	17:15	0.1
	20:56	1.1	23:24	0.9				
09					02:21	1.6	05:57	0.4
	09:30	1.4	13:04	0.9	14:49	1.0	17:52	0.2
	21:29	1.5						
10			00:21	1.1	03:09	1.8	06:43	0.5
	09:57	1.5	13:33	0.9	15:31	1.2	18:28	0.3
	22:04	1.8	01.11	1.0	00.50	0.0	07.01	0 =
11	10.04	1.0	01:11	1.2	03:50	2.0	07:21	0.5
	10:24	1.6	14:00	1.0	16:08	1.3	19:03	0.3
10	22:40	2.0	01.54	1.0	04.00	0.1	07.55	0.5
12	10.59	1.0	01:54	1.3	04:28	2.1	07:55	0.5
	10:53	1.6	14:25	1.0	16:43	1.4	19:37	0.4
10	23:16	2.1	00.22	1.0	05.02	0.1	00.00	0.5
13	11.94	1.6	02:33	1.3	05:03 17:15	2.1	08:29	0.5
	11:24	1.6	14:52	1.0	17:15	1.4	20:08	0.4
14	23:51	2.0	02.00	1.9	05.27	2.0	00.02	0.5
14	11.56	1.5	03:08	1.3 0.9	05:37	2.0 1.3	09:02	$\begin{array}{c} 0.5 \\ 0.4 \end{array}$
15	11:56 $00:23$	1.9	15:18 $03:41$	1.3	17:44 06:10	1.9	20:35 09:37	$0.4 \\ 0.5$
19					18:10			
	12:28	1.3	15:43	0.8	10:10	1.1	21:01	0.3

Oktober 2007 Pos.: 61°12' N, 6°30' V

Dag	EFI	В	EFF	<u> </u>	VFI	3	VFI	Κ	Dag	EFI	В	EFF	<u> </u>	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	00:54	2.3	04:35	1.4	06:53	2.0	10:24	0.3	16	00:48	1.4	04:13	1.0	06:37	1.4	10:00	0.3
	13:17	1.3	16:06	0.9	19:01	1.5	21:55	0.3		13:09	1.1	16:10	0.7	18:49	1.1	21:51	0.3
02	01:47	1.9	05:38	1.2	07:40	1.5	11:12	0.2	17	01:21	1.2	04:51	0.9	07:09	1.1	10:33	0.2
	14:07	1.0	16:38	0.7	19:53	1.3	22:59	0.3		13:51	1.0	16:45	0.7	19:32	1.0	22:44	0.3
03	02:54	1.5	06:57	1.0	08:30	1.0	12:07	0.1	18	02:01	1.0	05:36	0.7	07:47	0.8	11:13	0.2
	15:09	0.8	17:19	0.6	20:59	1.2				14:43	0.8	17:30	0.6	20:27	0.9	23:51	0.2
04							00:22	0.3	19	02:56	0.7	06:35	0.6	08:37	0.6	12:11	0.1
	04:38	1.2			09:30	0.7	13:19	0.0		15:53	0.7	18:27	0.6	21:37	0.9		
	16:32	0.6	18:11	0.6	22:21	1.1			20							01:16	0.2
05							02:05	0.3		04:30	0.6	08:00	0.5	09:48	0.5	13:31	0.1
	06:30	1.0			11:00	0.5	14:40	0.0		17:31	0.7	19:41	0.6	22:59	1.0		
	16:45	0.7			23:51	1.2			21							02:46	0.3
06							03:43	0.4		06:34	0.7	09:37	0.6	11:19	0.6	14:50	0.2
	07:48	1.1	11:45	0.6	12:20	0.6	15:46	0.0		19:09	0.9	21:17	0.8				
	19:54	1.0	21:58	0.8					22					00:18	1.2	03:58	0.4
07					01:05	1.4	04:54	0.4		07:30	0.9	10:52	0.7	12:41	0.7	15:48	0.2
	08:33	1.2	12:13	0.7	13:34	0.7	16:38	0.1		19:56	1.2	22:21	1.0				
	20:31	1.3	23:04	1.0					23					01:20	1.6	04:54	0.4
08					02:00	1.6	05:43	0.5		08:12	1.2	11:43	0.8	13:36	0.9	16:31	0.2
	08:57	1.2	12:39	0.8	14:24	0.9	17:21	0.2		20:29	1.5	23:12	1.2				
	21:06	1.5	23:57	1.1					24					02:10	2.0	05:42	0.5
09					02:45	1.8	06:21	0.5		08:50	1.4	12:25	0.9	14:22	1.1	17:10	0.2
	09:21	1.3	13:03	0.9	15:04	1.1	18:00	0.3		21:02	1.9						
	21:40	1.7							25			00:01	1.3	01:56	2.3	05:27	0.5
10			00:43	1.2	03:24	1.9	06:54	0.5		08:28	1.6	12:01	1.0	14:06	1.3	16:49	0.2
	09:50	1.4	13:28	0.9	15:40	1.2	18:36	0.3		20:39	2.2	23:50	1.5				
	22:14	1.9							26					02:39	2.5	06:10	0.5
11			01:23	1.2	04:00	1.9	07:25	0.5		09:06	1.7	12:34	1.1	14:49	1.5	17:31	0.3
	10:21	1.5	13:53	1.0	16:13	1.3	19:08	0.4		21:19	2.4						
	22:47	1.9							27			00:42	1.5	03:22	2.5	06:51	0.4
12			01:59	1.3	04:34	1.9	07:56	0.5		09:45	1.7	13:05	1.1	15:32	1.7	18:16	0.3
		1.5	14:21	1.0	16:43	1.3	19:37	0.4		22:03	2.4						
	23:19	1.9							28					04:05			
13						1.9		0.5		10:26		13:38	1.1	16:16	1.8	19:06	0.4
	11:25		14:49	0.9	17:12	1.3	20:05	0.3		22:51	2.3						
	23:50	1.8							29						2.0		0.3
14				1.2		1.8		0.4		11:11	1.5	14:13	1.1	17:01	1.8	20:01	0.4
	11:58	1.4	15:15	0.9		1.2		0.3		23:44	2.1						
15	00:18	1.6	03:38	1.1		1.6		0.4	30						1.6		0.2
	12:32	1.3	15:41	0.8	18:13	1.2	21:09	0.3			1.4			17:50	1.7	21:03	0.4
									31	00:46	1.7	04:39	1.0		1.2	09:34	
										12:56	1.2	15:44	0.9	18:47	1.5	22:15	0.4

November 2007 Pos.: 61°12' N, 6°30' V

Dag	ag EFB		EFK		VFB		VFK		Dag	EFB		EFK		VFB		VFK	
	tt:mm	rák	tt:mm	rák	${ m tt:mm}$	rák	${ m tt:mm}$	rák		tt:mm	rák	tt:mm	rák	${ m tt:mm}$	rák	$\mathrm{tt}\mathrm{:mm}$	rák
01	02:04	1.3	05:56	0.8	07:08	0.8	10:22	0.0	16	00:49	1.0	04:20	0.7	06:31	0.9	09:39	0.2
	14:04	1.0	16:47	0.9	19:54	1.4	23:38	0.3		13:33	1.1	16:31	0.8	19:15	1.2	22:51	0.3
02	03:30	1.1	_		09:00	0.6	11:22	0.0	17	01:45	0.8	05:16	0.6	07:23	0.7	10:30	0.2
	15:20	1.0	18:00	0.8	21:10	1.3				14:39	1.0	17:28	0.9	20:19	1.2		
03							01:09	0.4	18							00:07	0.3
	04:52	0.9		_			12:36	0.0		02:58	0.7	06:28	0.5	08:25	0.6	11:32	0.1
	16:46	1.0	19:20	0.8	22:27	1.3				15:52	1.0	18:31	0.9	21:30	1.3		
04							02:31	0.4	19							01:26	0.4
	05:59	0.9					13:49	0.0		04:26	0.8	07:54	0.5	09:30	0.6	12:39	0.1
	18:05	1.1	20:34	0.9	23:35	1.4				17:03	1.1	19:38	1.0	22:42	1.5		
05							03:33	0.5	20							02:35	0.5
	06:40	0.9	10:43	0.6	11:54	0.6	14:51	0.1		05:39	0.9	09:21	0.6	10:38	0.7	13:41	0.1
	18:57	1.3	21:35	1.0						17:59	1.3	20:40	1.1	23:46	1.8		
06					00:29	1.5	04:17	0.5	21							03:33	0.5
	07:12	1.0	11:09	0.7	12:48	0.8	15:43	0.2		06:34	1.1	10:18	0.7	11:47	0.8	14:35	0.1
	19:37	1.4	22:26	1.0						18:45	1.6	21:38	1.2				
07					01:14	1.6	04:53	0.5	22					00:42	2.0	04:23	0.5
	07:45	1.2	11:35	0.8	13:30	0.9	16:26	0.3		07:20	1.3	10:56	0.8	12:46	0.9	15:27	0.1
	20:13	1.5	23:09	1.1						19:29	1.8	22:35	1.3				
08					01:54	1.7	05:25	0.5	23					01:31	2.2	05:09	0.4
	08:18	1.3	12:00	0.9	14:07	1.1	17:04	0.3		08:01	1.4		0.9	13:39	1.2	16:19	0.2
	20:47	1.6	23:48	1.1						20:14	2.1	23:34	1.4				
09					02:30	1.8	05:55	0.5	24					02:18	2.2	05:51	0.3
	08:51	1.4	12:28	0.9	14:41	1.1	17:37	0.3		08:42	1.5	12:01	1.0	14:29	1.4	17:13	0.2
	21:20	1.6								21:02	2.2						
10			00:24	1.2	03:04	1.8	06:25	0.4	25			00:33	1.4	03:03	2.1	06:31	0.3
	09:25	1.5	12:57	0.9	15:14	1.2	18:09	0.3		09:24	1.5	12:36	1.0	15:16	1.7	18:09	0.3
	21:51	1.6								21:53	2.2						
11			00:59	1.2	03:36	1.7	06:55	0.4	26			01:33	1.4	03:48	1.9	07:09	0.3
	09:58	1.5	13:25	0.9	15:46	1.2	18:42	0.3		10:09	1.6	13:19	1.1	16:03	1.9	19:08	0.3
	22:22	1.6								22:47	2.1						
12	1000				04:07	1.6			27	40-0				04:33	1.7		0.2
	10:33		13:53	0.9	16:19	1.3	19:18	0.3				14:08	1.2	16:52	1.9	20:09	0.4
4.0	22:53	1.5						0.0		23:45	1.9			0 40			0.0
13					04:38			0.3	28		4.0			05:18			
	11:10		14:23	0.9	16:55	1.3	20:00	0.3		11:52	1.6		1.2	17:43	1.9	21:13	0.4
	23:26	1.4	00 50	4 0	0 = 4.0	4.0	00.0:	0.0	29	00:47	1.6	04:28	0.9		1.1	09:04	0.1
14		4.0				1.3		0.3		12:51	1.5		1.1		1.8	22:20	0.4
, .		1.3	14:59	0.9		1.3	20:48	0.3	30	01:49	1.3	05:27	0.7	06:54	0.8	09:47	0.1
15	00:04		03:34	0.8		1.1	08:58	0.3		13:51	1.4	16:54	1.0	19:40	1.6	23:31	0.4
	12:37	1.2	15:41	0.9	18:20	1.3	21:44	0.3									

Desember 2007 Pos.: 61°12' N, 6°30' V

Dag	g EFB		EFK		$\overline{ m VFB}$		VFK		Dag	EFB		EFK		VFB		VFK	
	tt:mm	rák	tt:mm	rák	tt:mm	rák	tt:mm	rák		tt:mm	rák	tt:mm	rák	${ m tt:mm}$	rák	tt:mm	rák
01	02:47	1.0	06:27	0.6	07:46	0.6	10:37	0.1	16	01:29	1.0	04:52	0.6	07:04	0.9	09:56	0.3
	14:52	1.3	17:53	1.0	20:45	1.5				14:11	1.5	17:13	1.1	19:57	1.6	23:48	0.5
02							00:45	0.4	17	02:29	0.9	05:52	0.6	07:56	0.7	10:43	0.2
	03:44	0.8	07:37	0.5	08:38	0.5	11:37	0.0		15:05	1.4	18:05	1.1	21:00	1.7		
	15:59	1.2	18:55	0.9	21:50	1.4			18							01:00	0.5
03							01:56	0.4		03:37	0.9	07:02	0.5	08:49	0.6	11:37	0.1
	04:41	0.7		_		_	12:44	0.1		16:01	1.4	19:02	1.1	22:06	1.7		
	17:14	1.1	19:58	0.9	22:53	1.3			19							02:09	0.4
04							02:56	0.4		04:49	0.8	08:20	0.6	09:49	0.6	12:38	0.0
	05:37	0.7	10:17	0.5	10:47	0.5	13:52	0.1		17:02	1.4	20:06	1.1	23:12	1.8		
_	18:19	1.2	20:57	0.9	23:50	1.4			20							03:11	0.4
05							03:44	0.4		05:54	0.9	09:26	0.6	11:05	0.7	13:45	0.1
	06:26	0.8	10:51	0.6	11:52	0.6	14:54	0.2		18:06	1.5	21:15	1.1				
0 -	19:08	1.2	21:48	0.9	00.40				21	0 - 10				00:14	1.8	04:05	0.3
06		0.0			00:40	1.4	04:22	0.4		06:49	1.0	10:10	0.7	12:18	0.9	14:56	0.1
	07:10	0.9	11:20	0.7	12:45	0.7	15:47	0.2		19:08	1.7	22:24	1.2		4.0		
o -	19:48	1.3	22:32	1.0	01.00		0.4.2.2	0.4	22			10.10	0.0	01:10	1.8	04:53	0.3
07	0 0			0.0	01:23	1.5	04:55	0.4		07:37	1.1	10:48	0.8	13:20	1.1	16:06	0.2
		1.1	11:42	0.8	13:31	0.8	16:31	0.2	2.0	20:05	1.9	23:32	1.2	00.00	4.0	0	0.0
0.0	20:24	1.3	23:14	1.0	00.01	4 -	05.00	0.4	23	00.04	1.0	11.01	0.0	02:02	1.8	05:35	0.3
08	00.00	1.0	10.00	0.0	02:01	1.5	05:26	0.4		08:24	1.3	11:31	0.9	14:15	1.5	17:12	0.2
	08:26	1.2	12:06	0.8	14:12	1.0	17:10	0.2	0.4	21:01	2.0	00.00	1.0	00.50	1 7	06.10	0.0
00	20:58	1.4	23:53	1.0	00.00	4 8	05.50	0.4	24	00.11	4 8	00:36	1.2	02:50	1.7	06:12	0.2
09	09:01	1 0	10.20	0.0	02:36 14:49	1.5	05:56	0.4		09:11	1.5	12:20	1.1	15:06	1.8	18:15	0.3
		1.3 1.4	12:32	0.8	14:49	1.1	17:47	0.3	25	21:55	2.0	01.95	1.2	02.26	1 6	06.49	0.0
10	21:30	1.4	00:34	1.0	03:10	1.5	06:25	0.3	25	10:00	1.7	01:35 $13:14$	1.2	03:36 $15:55$	1.6 2.0	06:48 19:15	$\begin{bmatrix} 0.2 \\ 0.4 \end{bmatrix}$
10	09:36	1.4	13:01	0.9	15:25	1.3	18:26	0.3		22:48	1.7	13:14	1.2	10:00	2.0	19:10	0.4
		1.4	13.01	0.9	10.20	1.5	10.20	0.5	26	22.40	1.9	02:27	1.1	04:21	1.5	07:23	0.2
11	22.02	1.0	01:14	1.0	03:43	1.5	06:55	0.3	20	10:51	1.8	14:08	1.1	16:44	2.1	20:13	$0.2 \\ 0.5$
11	10:13	1.5	13:33	0.9	16:01	1.4	19:07	0.3		23:39	1.7	14.00	1.5	10.44	2.1	20.13	0.0
		1.5	10.00	0.9	10.01	1.4	19.07	0.5	27	20.09	1.1	03:15	1.0	05:05	1.3	08:00	0.2
12	22.00	1.0	01:55	1.0	04:17	1 1	07:26	0.3	21	11:44	1.9		1.3		2.1		0.5
12	10:53	1.5			16:39		19:53	0.3	28	00:26	1.5	03:58	0.9	05:50	1.1	08:39	$0.3 \\ 0.2$
	23:11		14.03	1.0	10.55	1.0	13.55	0.0	20		1.8		1.3		1.1	22:05	0.5
13	20.11	1.4	02:35	0.0	04:54	1 3	07:50	0.3	29	01:11	1.2	04:39	0.7	06:34	0.9	09:20	0.2
10	11:38	1.6						0.3	2.5	13:26	1.7		1.2	19:15	1.7	23:02	0.4
	23:51		14.01	1.1	11.41	1.0	20.70	0.0	30	01:54	1.0	05:16	0.6	07:20	0.7	10:01	0.4
14	20.01	1.0	03:17	0.8	05:34	1.2	08:34	0.3		14:17	1.5		1.1		1.5	10.01	0.2
14	12:26	1.6	15:36	1.1		1.6	21:38	0.3	31	14.11	1.0	11.20	1.1	40.00	1.0	00:01	0.4
15		1.0	04:01	0.7		1.0	09:13	$0.4 \\ 0.3$	91	02:39	0.8	05:51	0.4	08:05	0.6	10:45	0.4
10	13:18	1.5	16:24	1.1		1.6		$0.3 \\ 0.4$		15:12	1.3			21:04	1.3	10.40	0.1
	19.10	1.0	10.24	1.1	10.09	1.0	44.40	0.4		10.12	1.0	10.19	1.0	41.04	1.0		