

МЕЖДУНАРОДНЫЙ ГЕОФИЗИЧЕСКИЙ ГОД



№ F2 МГЦ Июнь 1963г.

АКАДЕМИЯ НАУК КАЗ. ССР

АЛМА-АТА

Ком. составлена КАРПЕНКО

76°55'E широта 43°15'N

ИОНОСФЕРНЫЕ ДАННЫЕ

Ком. подсчитана Гусаковой

полюсное время 75°E

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20				
C	SU4.2NU3.8NU3.9F	4.0	4.9	6.7	6.7	U6.1S	S	A	5.7	U6.2S	7.0	6.5	U5.8AU5.4S	U5.9A	6.7	7.0	6.4	5.6	U5.2N					
4.9	4.6	U4.4S	4.0	4.0	4.5	5.9	U6.9M	7.3	U6.4A	U6.2A	6.4	C	C	7.1	U6.2S	U5.3A	5.0	4.9	6.3	U6.7N	S	A	A	
S	AU4.4FU4.1F	3.9F	4.4	5.7	5.8	U5.7A	U5.5A	5.9	U5.5S	U5.2R	U5.7A	U6.0R	6.4	A	A	4.8	U5.8S	6.9	U6.5S	U6.8S	A			
A	A	A	A	A	4.3	5.7	U6.5A	U6.6A	U6.1A	U6.1R	6.1	6.6	5.9	5.5	5.6	6.0	A	A	6.2	U6.4S	U6.3S	U6.8S	S	
U5.1S	C	C	4.5	3.9M	4.7	6.0	6.4	6.3	6.0	6.3	U6.4A	U6.1A	6.9	6.3	U5.8R	U6.1R	5.4	U5.2S	5.2	6.3	U6.2M	S	U4.8S	
U4.2S	A	AU3.8FU3.5F	4.3	5.8	U6.0R	A	A	6.8	6.4	6.4	U6.4A	6.2	5.3	5.4	U5.5A	U5.9R	6.5	6.7	6.3	6.2	5.5			
5.0	4.6	4.3F	3.9	3.9	4.2	4.6	U5.2A	U5.0A	U5.0A	U5.1A	U5.3R	U5.5R	U5.3R	U5.7R	6.2	5.8	U5.2S	4.8	4.9	5.3	5.2	5.1	U5.2S	
5.1	4.9	4.7	4.1	4.0	4.7	5.0	U5.4A	U6.0A	6.7	U6.3S	U6.0S	U6.0S	6.4	6.8	7.2	6.7	6.2	U6.5S	6.8	7.1	6.9	U6.3S	U6.2S	
U5.9S	5.9	4.9	5.1	U4.7N	4.9F	6.5	6.3	7.2	A	6.7	7.2	U6.6A	7.3	7.3	7.6	6.8	6.0	5.7	U5.5S	6.3	U6.5S	6.9	6.0N	
5.7	5.3	5.0	U4.6C	4.3	U4.6C	A	A	6.6	6.7	6.7	6.6	6.1	6.3	U6.6R	A	S	5.9	U6.1S	U6.4S	U7.1A	U6.7S	U6.5N	A	
AU5.8S	5.0NU4.2NU4.2A	4.5	4.8	U5.1R	AU5.7S	6.6	6.3	U6.4A	6.7	U6.3S	6.2	5.7	5.8	6.3	U6.5S	6.9	6.6	U6.1S	U5.7S					
U5.9S	SU5.2M	5.4	5.3	4.8	4.7	5.7	6.1	6.6	7.1	7.5	6.7	7.0	6.6	U6.4A	U6.4A	6.5	U6.3S	6.1	U6.1A	U6.5S	U6.5S	A	A	
AU4.9F	F	F	4.5N	5.7FU7.2FU7.1S	7.4	7.7	6.8	U7.2A	7.4	U6.7A	6.6	5.7	5.7	5.9	U6.3S	6.8	U7.4S	U7.3M	N	U5.8A				
A	FU4.7FU5.0F	F	4.6F	6.0	7.0	7.5	6.9	7.2	U6.1R	6.2	6.2	6.4	6.1	5.7	5.7	6.1	6.7	7.5	U7.0M	U6.7N	U6.3S			
5.0	4.8	4.5	4.4	4.4	5.1	U6.4S	7.9	A	U5.8R	U6.2A	R	7.2	6.8	7.3	7.0	6.2	U5.5A	5.7	U6.2A	U6.4S	U6.1S	5.8	U5.5S	
5.3	4.7	4.4	4.1	4.0	5.0	5.9	6.9	6.8	6.6	6.5	6.6	6.3	6.2	5.9	6.0	5.9	5.7	5.3	5.3	5.7	5.6	5.3	5.1	
4.7	4.4	4.3	4.2	U4.0S	4.7	5.8	6.9	7.4	6.7	7.0	6.8	6.1	6.8	6.5	U6.1S	5.9	6.2	U6.8A	U7.6S	U7.2S	U6.2S	U5.3S	5.1	
5.0	4.5	4.2	3.8	3.4	4.1	4.8	U4.7A	4.8	5.0	U5.0S	5.1	5.4	U5.5A	5.4	4.9	4.8	U4.7A	4.8	4.8	6.0	A	A	C	
C	A	A	4.3	U4.2F	4.4	U5.9R	6.6	5.2	5.6	6.7	7.2	7.9	7.4	7.2	6.6	6.5	U5.9S	U5.7A	U6.4A	7.0	U4.5S	4.5	U4.5S	
4.2	4.0	U3.8N	3.9	U4.0F	4.9	4.7	U5.0A	5.8	U6.3A	8.0	7.5	5.4	5.4	5.0	5.3	5.0	5.5	5.7	6.0	U5.2S	5.2	F	U4.6S	
U4.3S	FU4.1FU3.6F	3.9F	4.4	5.3	5.6	U6.2C	6.9	6.8	6.8	7.0	U5.8C	U5.8S	U6.0S	U6.2S	C	5.8	U6.3A	U6.2S	U5.8A	U5.4R	4.9			
4.7	4.6	3.9F	3.8F	4.2N	4.4	U5.4R	U5.9R	6.8	7.3	6.9	6.3	6.0	5.2	U5.2R	5.8	U5.9R	A	A	5.9	U5.9S	U5.9S	C	U6.5C	
U5.9C	U4.6M	4.0N	3.9	3.9	4.4	5.3	U5.8A	7.2	U6.3R	5.4	5.3	5.5	U5.8S	5.9	6.4	U6.4A	5.7	A	U5.6S	4.9	U4.4S	U4.2A	3.9	
U3.8F	3.7NU3.5FU3.2NU3.3F	4.3	4.6	5.3	5.5	U5.7R	6.2	6.0	A	A	U5.2S	5.5	5.5	5.3	5.3	U5.5A	5.7	U5.5C	4.9	U4.7F				
A	A	N	U3.3NU3.4F	3.7	4.9	5.4	U6.3C	U5.4C	U5.2S	U5.2R	6.1	U5.9R	U6.0S	6.0	U6.0A	A	A	5.6	U6.1A	U5.4A	U4.9A	U4.3F		
4.9	U4.5FU4.2NU3.8NU3.6N	4.4	4.3	4.9	A	A	5.1	5.2	5.1	4.7	U4.7A	U5.1A	5.5	U5.8A	U5.5A	4.9	U5.9A	U5.8A	5.4	5.2				
4.9	4.6	4.5	4.3	4.4	U5.4S	5.7	5.6	U6.2R	6.7	7.3	U6.1R	6.2	6.4	5.8	5.4	U5.0R	5.0	U6.0S	6.8	U6.2S	5.8	U5.3S	4.9	
U4.7S	4.2	3.9	3.6	3.7	4.0	5.0	4.7	4.8	5.4	6.4	U5.4A	4.9	A	A	5.3	6.2	5.6	5.2	5.2	U5.2S	U5.2S	U4.9S	4.6	
4.5	4.3	3.9	3.6V	3.5	4.5	4.8	4.9	A	A	5.7	5.7	R	R	U5.0A	U5.1A	5.4	U5.3A	4.8	U5.5S	6.8NU	U6.3S	U5.6S	5.0	
4.4	4.5	3.7	3.9	4.0	4.5	5.7	5.8	U5.9A	6.1	6.5	5.8	5.3	5.7	U5.3A	5.2	5.1	4.9	5.2	5.0	5.6	5.3	4.8	4.6	
0.6	0.5	0.6	0.5	0.4	0.4	1.1	1.4	1.2	1.1	0.8	1.0	1.1	1.0	1.2	1.0	0.8	0.6	0.9	1.0	1.0	1.0	1.4	0.8	
4.9	4.6	4.3	4.0	4.0	4.5	5.7	5.8	6.3	6.1	6.5	6.2	6.1	6.2	6.0	6.0	5.8	5.6	5.7	6.0	6.4	U6.2S	5.4	5.1	
Уточно	22	21	24	28	28	30	29	29	25	26	29	28	27	26	29	29	28	25	26	30	30	28	23	24
4.5	4.4	4.0	3.8	3.8	4.3	4.8	5.2	5.8	5.6	6.0	5.6	5.5	5.7	5.4	5.4	5.4	5.3	5.2	5.5	5.9	5.5	4.9	4.8	
5.1	4.9	4.6	4.3	4.2	4.7	5.9	6.6	7.0	6.7	6.8	6.6	6.6	6.7	6.6	6.4	6.2	5.9	6.1	6.5	6.9	6.5	6.3	5.6	



foF1 Мгц ИЮНЬ 1963г.

Алма-Ата

76°55' широта 43°15'N

ИОНОСФЕРНЫЕ ДАННЫЕ

поясное время - 75°E

АКАДЕМИЯ НАУК КАЗ ССР

Кем составлена - Агеевой

Кем подсчитана - Милютчиной

04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
	3.1	I3.4A	I3.8A	I4.1A	4.3	U4.4S	A	A	4.6	I4.4A	4.3	I4.0A	L	A	L	
	3.7	A	A	A	A	A	4.6	C	C	4.5	U4.4L	AU3.9L	L	L	L	
	A	A	A	A	A	I4.5A	4.5	4.6	I4.5A	4.4	4.3	A	A	A	A	
	L	A	A	A	I4.4A	4.5	4.5	4.5	I4.5A	I4.5A	4.5	4.1	A	A	A	
	U3.2L	U3.8L	I4.0A	4.2	4.4	4.5	I4.5A	I4.6A	4.5	4.6	4.3	4.2	L	L	L	
	L	3.7	A	A	A	A	4.6	A	A	A	L	4.2	A	L	A	
	L	3.1	3.6	I3.8A	A	A	A	I4.4A	I4.5A	4.4	4.5	I4.3A	4.1	AU3.5L	L	
	L	A	A	A	4.4	4.6	4.6	4.7	4.6	4.5	4.4	4.2	U4.0L	U3.5L	L	
	L	I3.7A	A	A	A	I4.6A	4.6	I4.6A	4.6	4.5	4.5	4.2	U4.0L	L	L	
	C	A	A	A	A	I4.5A	4.6	4.6	4.8	4.6	A	A	4.0	L	A	
	LU3.8L	A	A	4.6	I4.5A	A	A	I4.6A	4.5	U4.5L	I4.2A	4.0	U3.6L	L		
	L	4.0	4.2	I4.4A	A	A	I4.6A	I4.7A	4.7	A	A	4.3	L	U3.7L	L	
	L	A	A	A	A	A	A	4.6	I4.6A	I4.6A	L	4.2	U4.2L	3.4		
	U3.6L	A	A	A	A	I4.5A	4.7	A	A	4.5	4.4	L	A	A		
	K	3.9	4.2	I4.4A	4.7	I4.6A	U4.7L	4.4	4.6	4.4	4.4	U4.5L	A	L		
	L	L	A	4.1	4.3	I4.3A	4.6	4.6	4.6	4.4	4.3	U4.3L	4.0	L		
	L	A	4.0	4.4	4.5	4.5	L	4.6	4.5	4.6	4.3	4.2	4.0	A	L	
	L	A	A	4.0	U4.3R	4.4	4.4	4.4	I4.4A	4.4	4.3	4.2	A	A	A	
	L	N	A	L	I4.3A	4.3	4.6	4.5	I4.5A	4.5	I4.5A	I4.2A	A	A	A	
	A	A	A	A	A	4.4	I4.4A	4.5	4.4	4.4	4.1	4.0	3.9	U3.5L		
	L	A	4.1	4.2	4.4	4.4	4.4	4.3	U4.8L	4.4	4.2	4.1	L	A		
	L	3.7	I4.0A	4.2	I4.3A	4.4	A	A	4.4	I4.4A	4.2H	4.0	A	A		
	L	3.7	I3.9A	4.1	4.2	4.3	4.3	I4.4A	4.5	4.4	A	A	A	A		
	L	L	A	4.3	4.2H	4.3	4.5	A	A	A	4.2	4.0	3.9	A		
	L	I3.6A	AU4.2C	U4.2C	4.5	U4.4R	U4.4R	4.5	4.3	A	A	A	A	A		
	2.9	3.5	U4.4L	A	A	4.2	4.3	4.3	4.3	A	A	A	A	A	A	
	U3.1L	U3.6L	4.0	4.0	U4.2S	4.3	4.4	4.3	4.4	4.4	4.3	4.0	3.9	3.4	A	
	3.0	3.4	3.9	4.0	4.3	4.4	I4.4A	4.4	A	A	4.2	I4.0A	3.8	3.4	A	
	L	3.2	3.6	A	A	A	4.3	4.4	4.4	4.4	A	A	A	A	A	
	L	A	A	A	A	4.3	4.4	4.5	4.5	I4.4A	4.3	4.2	3.9	A	A	
Минимум	3.1	3.7	4.0	4.2	4.3	4.4	4.5	4.5	4.5	4.4	4.3	4.2	4.0	3.5		
Уменьш.	8	16	12	14	18	25	26	23	25	23	22	22	13	8		

МЕЖДУНАРОДНЫЙ ГЕОФИЗИЧЕСКИЙ ГОД



№E Мгц Июнь 1963г.
Алма-Ата
76°55'E широта 43°15'N

ИОНОСФЕРНЫЕ ДАННЫЕ
поисковое время 75°E

Академия Наук Каз ССР.
Ком. составлена Агеевой
Ком. полевая Гусяковой

	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18		
	E 2.00	U2.40A	U2.90A		AU3.10A	AU3.30A	AU3.30A		AU3.40A		AU3.20A	3.00	2.50	U1.90A	A	A	
	A	AU2.30A	U2.70A	U3.00A	A	A	A	A	C	C	A	A	A	A	A	A	A
	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
		A	A	A	A	A	A	A	A	A	3.5	A	A	A	A	A	A
		AU2.50A	U2.85A	U3.10A		AU3.30A	A	A	A	A	AU3.20A	A	A	A	A	A	A
	AU1.90A	U2.40A	U2.80A	U3.00A	U3.20A	U3.25A	A	A	A	A	A	A	A	AU2.10A	U1.60A	A	A
	U2.00A	U2.50A	U2.80A	U3.00A	U3.20A	U3.20A	A	A	A	A	A	AU3.00A	U2.70A	U2.20A	U1.60A	A	A
E	AU2.05A	U2.50A	A	A	A	A	A	A	A	A	A	AU3.00A	A	A	A	A	A
	C	A	A	A	A	A	AU3.40A	A	A	A	A	A	AU2.80A	A	A	A	A
	A	2.40	A	A	A	A	A	A	A	A	AU3.30A	A	U2.70A	A	U1.40B	A	A
E	2.00	2.60	3.00	A	A	A	A	A	A	A	A	AU3.20A	2.80	2.30	A	A	A
E1.20B	U2.00A	U2.50A	U2.90A	U3.05A	U3.30A	U3.30A	U3.40A	A	A	A	A	A	A	U2.90A	A	A	A
	AU2.00A	A	AU3.10A	A	A	A	A	A	A	A	A	A	A	AU2.30A	A	A	A
		AU2.40A	U2.80A	U3.10A	U3.30A	A	A	A	AU3.50A	U3.35A	U3.20A	U3.00A	U2.70A	U2.30A	A	A	A
	AU2.00A	U2.30A	U2.80A	U3.00A	U3.10A	U3.30A	3.30	A	AU3.30A	U3.20A	AU3.00A	2.70	A	A	A	A	E
	EU1.90A	U2.40A	AU3.10A	A	AU3.40A	A	A	A	A	A	A	AU2.50A	U2.20A	A	A	A	E
	U1.30A	U1.70A	U2.40A	U2.70A	U3.00A	U3.20A	AU3.40A	A	A	A	3.40	3.30	3.00	2.70	U2.30A	A	A
	U1.90A	U2.40A	U2.70A	U3.00A	AU3.30A	A	A	A	A	A	A	A	AU2.90A	U2.60A	A	A	A
	EU1.90A	U2.50A	U2.80A	U3.00A	AU3.20A	A	A	A	A	A	A	A	A	A	2.40	A	A
	A	A	A	AU2.90A	A	A	A	A	A	A	A	A	A	A	A	A	A
	AU1.80A	U2.30A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	A	2.00	A	A	A	A	3.30	A	A	A	A	A	A	A	A	A	A
	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	U1.90A	U2.40A	A	A	A	A	A	AU3.40A	U3.40A	3.40	3.20	3.00	2.60	2.30	A	A	A
E	U1.70A	U2.30A	U2.60A	A	A	A	A	A	A	U3.30A	U3.20A	U3.00A	U2.70A	U2.20A	A	A	A
	AU2.20A	U2.60A	A	A	A	A	A	A	A	A	A	A	AU2.20A	A	A	A	A
E	EU1.90A	U2.30A	U2.70A	U3.00A	U3.20A	A	A	A	A	A	A	AU3.20A	U2.95A	U2.60A	U2.20A	U1.60A	A
	1.90	U2.30A	U2.60A	U3.00A	A	A	A	A	A	A	A	3.20	U3.10A	U2.80A	U2.30A	U1.40A	A
E	E	U1.90A	U2.40A	U2.80A	U3.00A	U3.20A	U3.30A	U3.40A	U3.40A	U3.40A	U3.35A	U3.20A	U3.00A	U2.70A	U2.35A	U1.60A	E
2	8	18	21	16	15	8	9	6	1	4	6	9	12	15	14	5	E

1.0

18.0 ... 20 сек. —

Служба автоматическая

МЕЖДУНАРОДНЫЙ ГЕОФИЗИЧЕСКИЙ ГОД



№ Es Мгц. Июнь 1963г.

Алма-Ата

76°55'E широта 43°15'N

АКАДЕМИЯ НАУК КАЗ ССР

Кем составлена Агеевой

Кем подсчитана Гусяковой

ИОНОСФЕРНЫЕ ДАННЫЕ

полосное время 75°E

CJ105XJ74.3XJ4.0X	G 2.6	4.6	J10.2X	J7.2X	J9.4X	J8.1X	J9.0X	J7.0X	J5.0X	J7.6X	4.3	J7.2X	J7.9X	J9.5X	D10.5C	J4.3X	J3.1X	J4.9X	J4.3X				
J3.9X 5.6	J4.9X	J4.0X	2.5	J2.6X	3.2	J6.7X	J6.8X	J8.2X	D10.5C	9.3	C	CJ4.9H	J4.3X	J7.6X	4.2H	J6.9X	J8.3X	J4.6H	J8.3H	D10.5C	D10.6C		
J8.8X	D10.5C	J5.0X	J5.0X	J3.3X	J4.3X	J5.1X	J5.6X	D10.5C	J5.6X	J4.8X	J4.7X	J5.0X	J7.1X	4.7	J4.1X	J9.0X	J7.9X	D10.5C	J7.4H	D10.5C	J6.3H	J6.9X	D10.5C
J105X	J8.0H	J9.3X	J76.9H	J76.9X	J4.3H	J4.8X	J8.7X	J8.8X	D105C	D105C	4.8	J4.9X	J4.9H	J76X	J72X	J4.1X	J9.8X	J9.4X	J103X	J103X	J108X	J103X	J7.3Y
J4.3X	C	CJ2.6X	J4.3X	J2.8X	J4.1X	J7.2X	D105C	J4.9X	J7.8X	D105C	J7.5X	J4.9X	J4.9X	J4.5X	J4.9H	D105C	J2.8X	J3.1X	J4.2X	J6.3X	J8.7X	D105C	
J8.3X	J7.3X	J76.5X	J4.3X	J3.3H	J3.9H	3.3	J4.5X	J9.3X	J100X	J6.0X	J4.9X	J9.1X	J9.8X	J7.1X	3.6	3.5	J6.3X	D105C	J3.1X	J4.9X	J3.6X	J3.5X	J2.8X
J1.8X	J4.0X	J3.9X	J4.4X	J1.8H	2.3	3.4	J5.3X	J4.8X	J7.5Y	J8.3H	J4.9X	J6.7Y	J4.3X	J4.9X	J5.0X	J4.8X	J8.9H	2.7	J3.3X	J3.3X	J3.4X	J2.3X	J1.9X
J3.6X	J3.8H	J2.7X	J4.0X	J3.0X	2.7	J4.3X	J5.0X	J7.2X	J4.8X	J4.6X	J4.3X	J4.3X	3.3	3.5	3.6	J4.3X	3.7	3.0	2.1	J2.9H	1.6	J2.5H	2.5
J4.9X	J2.8X	J2.0X	2.3	J2.6X	2.6	J4.3X	J6.0X	J6.5X	J6.7X	J7.1X	J6.5X	J7.0X	7.4Y	3.5	3.4	3.5	3.3	3.2	J7.3Y	J4.3H	J3.5X	J3.2X	J2.8X
J2.2X	J2.5X	2.5	CJ4.9X	CJ3.2X	J8.3X	D105C	J5.0X	J4.9H	J4.9X	J4.9X	J6.8Y	J2.8X	D105C	J6.9X	4.0	J8.2X	5.9	D105C	J6.9H	J4.9X	J108H		
J103H	J9.3X	J7.8X	J4.3H	J7.3X	J3.9X	3.2	J4.8X	J7.2X	D105C	5.7	J7.5X	J8.2X	J6.3X	4.2	4.1	J7.1X	J109X	J4.3X	J3.2X	J4.5X	J8.3X	D105C	J6.3X
J4.2X	J4.1X	2.7H	J3.3X	G 2.8	J4.3X	4.0	J6.4X	J5.6X	J6.7X	J4.9X	J6.0X	J4.3X	J7.3H	D105C	J4.2X	J4.0X	J4.4X	J140X	J70H	J8.8X	J7.5X	J8.3X	
J104X	J4.9X	J4.1H	J4.9X	J2.3X	J3.9X	J6.6X	J7.0X	J107X	J8.8X	J8.3X	J105X	D105C	J8.7H	J6.7H	J7.5X	J4.8X	3.4	J3.5X	J8.3X	J108H	J7.3X	J6.8H	J8.3H
J8.4X	J9.3X	J7.0X	J5.0X	J4.9X	2.3	4.0	J4.8X	J6.3X	J6.6X	4.7	J4.9X	J6.7X	J8.2X	J7.9X	J4.9X	J4.3X	J5.8X	J8.0X	J9.3H	J104X	J104X	J9.3X	J3.3X
J3.7X	J2.5X	J2.8X	J4.0H	J3.3X	J3.3X	J4.3X	J4.0X	J9.3X	J7.9X	J11.3X	J4.8X	4.6	3.7	4.3	3.7	J4.8X	J7.3X	3.3	J7.3X	J3.8H	J7.6X	J5.0X	J5.3X
J4.1X	J3.4X	J2.7X	J1.8X	1.5	2.3	J4.5X	J4.9X	D105C	D105C	4.0	3.7	J4.2X	3.6	3.9	J6.5X	3.6	J4.3X	J3.3H	2.5	2.6	G 2.3	J4.3X	
J4.2X	J3.3X	J2.9X	J4.3X	3.0H	2.7	4.0H	4.0	3.8	7.4	4.0	4.0	4.0	4.0	4.1	3.4H	J4.2X	3.3	5.0	J3.3X	J4.8X	J3.3X	J3.2X	J2.5X
EJ2.0X	J1.5X	J2.0H	2.2	2.7	J7.9X	J7.0X	4.1	J5.0X	J8.0X	3.7	3.7	J8.5X	D105C	G	3.8	J6.6X	J9.3X	J8.0X	D105C	J9.0X	D105C	C	
CJ9.9X	J8.3X	J6.9X	J3.3X	2.1	3.3	J5.0X	J5.0X	J5.0X	J4.3X	J3.9X	3.8	J9.3X	J4.5X	J7.5X	4.6	J6.0X	J7.0X	J105X	J7.4X	3.3H	J2.5X	2.4	
J3.3X	J3.3X	2.5	J2.9X	4.0	J4.5X	J8.8X	J7.9X	J4.9X	J8.7X	J4.8X	J6.8X	3.6	3.5	3.4	3.3	3.2	J3.4X	2.4	2.6	J2.9X	J4.9X	J4.2X	J4.7X
J1.8X	J1.7X	2.0H	J4.8X	J2.5X	J3.3X	J4.1X	J4.8X	J4.8X	J4.1X	J4.9X	J3.9X	J3.4X	4.0	4.0	3.5	3.5	3.7	J4.4X	J7.1X	J4.3X	J6.3X	J2.9X	J3.5X
J7.5X	J3.3X	J4.0X	J2.6X	J2.7X	2.5	3.6	J7.3X	J4.5X	J6.7X	J4.1X	J7.6X	J7.9H	J4.7X	J4.8X	3.6	4.3	J10.1X	J8.3X	J4.8X	J4.0X	J8.7X	J8.7X	J8.0X
J4.3X	J4.9X	J4.9X	J4.3X	J4.8X	2.5	J9.8Y	J8.3X	J4.8X	J11.0X	J7.8Y	J7.4X	J6.4Y	J4.9H	J4.3H	J4.8H	J10.5X	J11.2H	J3.8Y	D10.5C	J8.1H	J9.3X	J10.9H	J10.8H
J4.3X	J4.9X	J4.1X	J3.4X	J3.1X	1.8	3.6	J4.9X	J4.9X	J4.8X	4.0	J6.3X	5.7	5.6	J4.7X	J4.9H	5.4	4.6	5.5	J8.5X	5.0	J7.0X	J4.8X	J4.1X
J4.8X	J4.9X	J8.3X	J4.9H	J4.0X	2.1	J4.7X	J7.0Y	D105C	J4.7X	4.4	J4.8X	4.0	4.0	4.5	5.6	J6.7H	D105C	J9.3C	J6.3Y	J7.4X	D10.5C	D10.5C	J3.1H
J2.5X	J2.7X	J4.1X	J2.5X	J4.0X	2.6	J4.4X	J6.3X	J9.0X	J7.4X	J4.3X	J4.1X	4.0	3.7	J5.0X	J5.0X	J5.0X	6.4	J6.3X	J5.0X	6.0	J7.7X	J5.0X	J5.0X
J4.1X	J3.3X	J3.3X	J3.1X	2.7	2.6	3.0	3.4	3.6	J4.9X	4.2	4.0	4.5	4.0	4.6	4.1	4.0	J4.1X	3.4	5.6	J9.4X	J8.0X	J3.6X	J3.6X
J3.9X	J3.3X	J4.3X	J3.3X	J3.2X	J4.0X	J8.0X	J9.7X	5.0	8.4	4.7	J7.3H	7.4Y	J9.3X	J6.9X	J4.0X	J4.9X	J4.3X	J3.9X	J3.8X	1.8	2.0	J3.6X	J4.0X
J3.4X	4.0H	4.3	G	G 2.5	3.3	J4.5X	J7.3X	J7.4X	J4.8X	J4.8X	J3.9X	J4.0X	J6.8X	J12.3X	J6.4X	J7.0X	J4.9X	J6.7X	D105C	J9.4X	J6.3X	J3.9X	
J4.1X	J4.4X	J4.0X	J3.5X	J3.3X	J2.8X	J4.8X	J4.9X	J9.3X	J7.3X	4.0	J4.3X	J4.3X	5.2	J6.5X	3.4	J6.4X	3.5	J4.9X	J4.3X	4.5	J2.5X	J4.2X	J4.3X

27	3.1	23	18	1.5	10	1.4	2.4	4.4	3.7	3.5	3.0	2.8	3.2	3.6	2.0	2.3	3.9	4.9	5.0	5.2	5.3	3.2	5.0
J4.2X	J4.0X	J4.1X	J4.0X	J3.2X	2.6	4.3	J5.4X	J7.0X	J7.4X	J4.8X	J4.9X	J4.9X	J4.8X	4.3	J4.8X	J5.9X	J5.0X	J6.6X	J4.8X	J7.0X	J5.0X	J4.3X	
28	29	29	29	30	29	30	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	29
35	33	27	28	25	25	3.4	4.8	4.9	5.0	4.3	4.3	4.0	4.0	4.3	3.6	4.1	4.0	3.4	3.3	4.2	3.4	3.5	3.2
62	64	50	46	40	35	48	72	93	87	78	73	68	72	69	5.6	6.4	7.9	8.3	8.3	9.4	8.7	8.7	8.2

МЕЖДУНАРОДНЫЙ ГЕОФИЗИЧЕСКИЙ ГОД



ФБЕС Мгц. ИЮНЬ 1963г.

АКАДЕМИЯ НАУК КАЗ ССР

Алма-Ата

ИОНОСФЕРНЫЕ ДАННЫЕ

Ком. составлено

Агеевой

76°55'E широта 43°15'N

полное время 75°E

Ком. подсчитано

Милютчиной

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
C	2.5	1.6	1.9	G	G	4.0	5.1	6.0	3.6	3.7	A	4.8	3.8	6.4	4.0	A	3.4	A	2.1	1.2	2.5	2.9	2.8		
3.0	2.0	4.0	2.0	2.0	2.0	2.8	6.1	6.1	A	A	4.0	C	C	4.1	4.0	A	3.6	3.4	2.2	3.8	1.6	A	A		
3.4	A	2.4	3.0	1.6	4.0	5.0	4.6	A	A	4.6	4.0	3.7	A	4.4	3.5	A	A	4.4	4.6	6.4	1.5	4.7	A		
A	A	A	A	A	2.0	4.0	A	A	A	4.1	4.0	4.1	4.5	4.5	3.4	3.7	A	A	4.0	1.6	2.5	5.0	3.0		
2.2	C	C	2.3	3.0	2.0	3.4	4.7	4.0	4.0	4.5	A	6.4	3.5	2.9G	4.0	3.5	3.6	2.5	2.7	2.0	4.3	3.5	2.4		
3.8	A	A	2.8	2.2	2.1	2.9	4.4	A	A	4.7	4.3	4.8	A	5.4	3.5	3.5	A	3.3	2.8	3.0	3.2	2.3	2.1		
1.2	2.3	2.6	2.4	1.4	2.0	3.3	A	A	A	A	4.5	4.5	4.0	4.5	4.5	3.6	4.6	2.4	2.3	2.0	3.0	2.0	1.5		
2.0	1.8	1.7	2.6	2.1	2.4	3.8	A	A	4.0	3.5	3.5	3.5	3.3	3.5	3.5	3.5	3.6	2.6	2.1	2.2	1.5	1.6	2.0		
1.5	1.7	E	G	1.6	2.4	3.9	5.2	5.2	A	6.1	4.4	6.9	3.5	3.5	3.4	3.4	3.1	3.0	2.8	3.0	2.2	3.0	2.0		
1.2	1.4	1.3	C	2.7	C	A	A	4.7	4.6	4.2	3.7	4.2	4.6	6.2	A	4.3	3.5	3.0	5.3	A	2.1	4.0	A		
A	3.4	2.8	1.5	A	2.0	2.7	4.7	A	3.7	5.1	6.1	A	6.0	4.0	3.6	4.8	3.5	3.0	3.0	4.0	4.0	4.2	3.0		
2.0	2.8	1.6	1.8	G	2.2	G	3.8	6.0	5.4	6.1	4.7	5.5	3.9	A	A	3.4	3.7	3.0	A	6.0	1.5	A	A		
A	3.5	3.4	3.0	G	3.0	6.3	6.4	7.0	7.0	6.5	A	4.0	A	5.6	4.3	3.1	3.2	3.0	6.0	7.0	6.3	6.4	6.2		
A	1.6	3.7	3.4	2.3	2.2	3.8	4.8	6.0	6.0	4.7	4.4	5.4	4.6	3.7	3.6	4.0	5.4	5.4	6.0	3.5	4.0	3.0	2.4		
2.0	1.6	1.5	1.6	2.0	3.0	3.6	4.0	A	4.5	6.2	4.4	4.0	3.6	4.0	3.5	3.6	A	2.6	A	2.1	5.4	3.6	3.0		
3.0	1.8	1.5	E	1.4	2.2	4.3	3.7	4.0	6.0	3.8	G	3.6	3.5	3.4	4.0	3.2	G	2.3	1.8	1.8	G	G	2.9		
1.5	1.6	1.5	1.7	G	2.3	4.0	3.3	3.8	3.6	3.5	3.5	3.6	3.6	3.6	3.4	3.0	3.0	A	2.0	4.8	2.1	2.4	1.6		
E	1.3	1.3	1.6	1.6	2.0	4.3	A	3.7	3.6	4.4	3.6	3.6	A	G	G	3.7	A	3.7	4.0	5.4	A	A	C		
C	A	A	3.4	1.6	2.0	3.0	4.9	3.8	4.4	3.7	3.5	3.4	4.5	3.7	6.0	4.4	5.0	A	H	3.0	2.4	2.0	1.4		
1.5	1.5	1.4	1.3	2.0	4.3	3.6	A	4.5	A	4.0	5.7	3.6	3.5	3.4	3.3	2.9	2.8	2.0G	2.6	2.0	2.6	2.9	1.9		
1.2	1.5	E	1.5	2.0	2.9	3.4	4.3	3.4	4.0	4.4	3.6	3.4	3.4	3.4	3.4	3.0	0.0	4.0	A	2.2	2.0	2.4	2.0		
1.4	2.0	2.1	2.0	2.0	2.0	3.4	4.6	4.2	6.4	4.0	5.3	4.0	4.4	4.6	3.4	3.7	A	A	4.8	3.0	3.7	3.7	3.0		
3.0	2.1	1.4	2.9	2.6	2.4	3.0	A	3.5	3.6	4.0	3.7	4.5	4.0	3.7	4.3	A	4.4	A	4.6	3.2	2.2	A	2.1		
3.0	3.4	1.9	1.5	2.0	1.5	3.4	4.0	4.3	3.6	3.3	3.7	A	A	4.4	3.8	3.5	3.4	4.4	A	3.0	4.1	4.5	2.2		
A	A	2.0	1.3	1.5	2.0	3.6	4.5	4.0	3.4	4.4	4.2	3.5	3.8	4.0	5.0	A	A	A	4.0	A	A	A	2.4		
1.5	2.2	2.2	E	1.7	2.0	3.5	4.3	A	A	3.6	3.5	3.7	3.7	A	A	4.8	A	A	3.3	6.0	A	2.3	3.1		
2.3	1.5	2.2	1.7	G	2.0	2.7	2.9	3.6	3.9	3.6	3.9	3.9	3.7	4.0	3.6	3.7	3.4	3.1	5.0	3.5	3.0	2.8	3.0		
3.6	1.5	1.6	1.8	1.9	2.2	3.1	3.3	3.0	3.7	3.9	A	3.6	A	A	4.2	4.5	3.3	3.0	3.0	1.3	1.8	3.6	3.6		
3.0	2.2	E	G	G	2.0	3.0	4.4	A	A	4.0	3.6	3.5	3.5	A	A	4.9	A	4.4	4.3	5.0	6.2	3.3	2.7		
2.3	2.4	3.0	2.0	1.8	6	4.0	4.6	A	5.3	3.9	4.0	3.7	4.5	A	G	3.5	3.1	4.8	3.3	4.2	2.0	3.5	2.2		
2.6	2.1	1.9	1.8	1.8	2.0	3.6	4.6	5.6	4.9	4.2	4.0	4.0	4.0	4.0	3.7	3.7	3.6	3.7	4.0	3.1	2.6	3.1	2.7		
2.8	2.9	2.9	2.9	3.0	2.9	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.9	

1.0

18.0

20 сек.

Станция

автоматическая

МЕЖДУНАРОДНЫЙ ГЕОФИЗИЧЕСКИЙ ГОД



Станция *Алма - Ата* Июнь 1963г.

Академия Наук Каз ССР

Координаты: *76°55'E* Широта *43°15'N*

ИОНОСФЕРНЫЕ ДАННЫЕ

Кем составлено *КАРПЕНКО*
Кем обработано *Милютиной*

полное время *75° E*

Час	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1	C	1.0	1.0	1.0	1.0	1.0	1.0	1.4	1.5	1.5	1.6	1.6	1.7	2.0	1.6	1.4	1.5	1.5	1.0	1.0	1.0	1.0	1.0	1.0	
2	1.0	1.0	1.0	1.0	1.0	1.0	1.4	1.6	1.5	1.5	1.4	1.5	C	C	1.6	1.5	1.4	1.3	1.4	1.3	1.0	1.0	1.0	1.0	
3	1.0	1.0	1.0	1.0	1.0	1.2	1.2	1.2	1.5	1.4	1.6	1.6	1.5	1.5	1.4	1.6	1.4	1.3	1.2	1.0	1.0	1.0	1.0	1.0	
4	1.0	1.0	1.0	1.0	1.0	1.0	1.3	1.5	1.4	1.5	1.5	1.8	1.5	1.6	1.5	1.6	1.4	1.4	1.4	1.4	1.0	1.0	1.0	1.0	
5	1.0	C	C	1.0	1.0	1.0	1.2	1.3	1.5	1.6	1.5	1.6	1.6	1.6	1.5	1.3	1.3	1.4	1.3	1.0	1.0	1.0	1.0	1.0	
6	1.0	1.0	1.0	1.0	1.0	1.0	1.3	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.4	1.5	1.4	1.3	1.3	1.0	1.0	1.0	1.0	1.0	
7	1.0	1.0	1.0	1.0	1.0	1.0	1.3	1.3	1.3	1.3	1.3	1.5	1.6	1.7	1.6	1.3	1.2	1.3	1.3	1.0	1.0	1.0	1.0	1.0	
8	1.0	1.0	1.0	1.0	1.0	1.0	1.3	1.3	1.3	1.3	1.3	1.5	1.6	1.8	1.8	1.5	1.4	1.5	1.3	1.2	1.0	1.0	1.0	1.0	
9	1.0	1.0	1.0	1.0	1.0	1.0	1.3	1.4	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.3	1.3	1.3	1.0	1.0	1.0	1.0	
10	1.0	1.0	1.0	C	1.3	C	1.4	1.6	1.5	1.6	1.5	1.5	1.6	1.5	1.6	1.6	1.6	1.5	1.6	1.2	1.0	1.0	1.0	1.0	
11	1.0	1.0	1.0	1.0	1.3	1.2	1.6	1.6	1.5	1.7	1.7	1.7	1.7	1.5	1.5	1.5	1.4	1.3	1.4	1.0	1.0	1.0	1.0	1.0	
12	1.0	1.0	1.3	1.0	1.4	1.3	1.3	1.4	1.6	1.6	1.7	1.7	2.0	1.7	2.0	1.7	1.5	1.5	1.3	1.0	1.0	1.0	1.0	1.0	
13	1.0	1.0	1.0	1.0	1.2	1.2	1.3	1.3	1.6	1.6	1.5	1.5	1.7	1.7	1.5	1.5	1.4	1.4	1.3	1.0	1.0	1.0	1.0	1.0	
14	1.0	1.0	1.0	1.0	1.0	1.6	1.6	1.5	1.5	1.4	1.6	1.6	1.7	1.6	1.6	1.6	1.7	1.4	1.2	1.2	1.0	1.0	1.0	1.0	
15	1.0	1.0	1.0	1.0	1.0	1.4	1.4	1.5	1.5	1.5	2.0	1.6	1.6	1.6	1.5	1.6	1.4	1.4	1.0	1.0	1.0	1.0	1.0	1.0	
16	1.0	1.0	1.0	1.0	1.3	1.3	1.4	1.5	1.6	1.4	1.5	1.5	1.6	1.5	1.5	1.5	1.5	1.5	1.2	1.0	1.0	1.0	1.0	1.0	
17	1.0	1.0	1.0	1.0	1.2	1.3	1.3	1.6	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.5	1.5	1.3	1.3	1.0	1.0	1.0	1.0	1.0	
18	1.0	1.0	1.0	1.0	1.0	1.3	1.3	1.4	1.4	1.5	1.5	1.7	1.7	1.7	1.7	1.5	1.5	1.3	1.3	1.0	1.0	1.0	C	1.0	
19	C	1.0	1.0	1.0	1.0	1.0	1.3	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.7	1.6	1.5	1.4	1.3	1.1	1.0	1.0	1.0	1.0	
20	1.0	1.0	1.0	1.0	1.0	1.3	1.4	1.6	1.5	1.5	1.5	1.5	1.5	1.6	1.5	1.5	1.5	1.4	1.2	1.2	1.0	1.0	1.0	1.0	
21	1.0	1.0	1.0	1.0	1.0	1.0	1.2	1.4	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.4	1.4	1.5	1.3	1.2	1.0	1.3	1.0	1.0	
22	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5	1.6	2.0	2.0	1.5	1.5	1.4	1.3	1.0	1.0	1.0	1.0	1.0	
23	1.0	1.0	1.0	1.0	1.0	1.3	1.3	1.5	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.4	1.3	1.4	1.0	1.0	1.0	1.0	1.0	
24	1.0	1.0	1.0	1.0	1.0	1.0	1.4	1.3	1.5	1.4	1.5	1.0	1.4	1.5	1.4	1.4	1.5	1.4	1.4	1.2	1.0	1.0	1.0	1.0	
25	1.0	1.0	1.0	1.0	1.0	1.0	1.4	1.4	1.2	1.2	1.3	1.4	1.3	1.3	1.3	1.4	1.4	1.3	1.4	1.4	1.0	1.0	1.0	1.0	
26	1.0	1.0	1.0	1.0	1.0	1.2	1.4	1.4	1.6	1.4	1.6	1.6	1.5	1.7	1.7	1.7	1.6	1.5	1.5	1.0	1.0	1.0	1.0	1.0	
27	1.0	1.0	1.0	1.0	1.0	1.1	1.4	1.4	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.5	1.4	1.4	1.2	1.0	1.0	1.0	1.0	
28	1.0	1.0	1.0	1.0	1.0	1.0	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.5	1.3	1.5	1.0	1.0	1.0	1.0	1.0	
29	1.0	1.0	1.0	1.0	1.0	1.2	1.4	1.4	1.5	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.4	1.4	1.3	1.0	1.0	1.0	1.0	1.0	
30	1.0	1.0	1.0	1.0	1.0	1.3	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.4	1.5	1.3	1.3	1.0	1.0	1.0	1.0	1.0	
31																									
Минимум	1.0	1.0	1.0	1.0	1.0	1.2	1.3	1.4	1.5	1.5	1.5	1.6	1.6	1.6	1.5	1.5	1.4	1.3	1.2	1.0	1.0	1.0	1.0	1.0	
Уменьш.	28	29	29	29	30	29	30	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	29	

МЕЖДУНАРОДНЫЙ ГЕОФИЗИЧЕСКИЙ ГОД



(M3000)F2 Июнь 1963г.

Академия Наук Каз ССР

Алма-Ата

ИОНОСФЕРНЫЕ ДАННЫЕ

Кем составлена Карпенко

76°55' E широта 43°15' N

долготное время 75° E

Кем подсчитана Гусакowej

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
C	SU2.95	U2.70	U3.05F	2.80	A	3.10	AU3.05S	S	A	2.75	S	A	3.05	AU3.00S	A	3.05	3.20	3.05	3.00U3.00N
2.90	3.00	S	3.05	3.10	3.15	3.00	A	3.25	A	A	2.90	C	C	3.20	J3.10S	A	3.25	2.95	3.00U3.05N
S	AU2.85	AU2.85F	2.85F	A	A	3.05	A	A	2.95U3.25S	U3.30R	AU2.80R	3.20	A	A	A	S	AU2.90	U3.05S	A
A	A	A	A	A	2.75	2.85	A	A	AU3.05R	2.80	3.05	2.85	2.90	2.85	3.05	A	A	3.10U3.0	SU3.00S
U3.10S	C	C	3.30	3.05N	3.05	3.20	3.10	3.15	2.95	3.00	A	A	3.00	2.95U3.05R	U3.15R	3.10U3.20S	3.00	2.95U3.05N	SU3.00S
A	A	AU2.95	FU3.05F	3.10	3.10	U3.10R	A	A	3.15	3.05	3.00	A	3.10	2.85	3.00	A	R	3.05	3.05
3.05	2.95	2.75F	2.65	2.90	2.80	2.75	A	A	A	A	AU2.70R	R	2.90	3.05	A	3.00	3.05	2.85	3.00
2.80	2.85	2.90	2.95	3.30	3.20	2.90	A	A	3.15	U2.65S	U2.80S	U2.65S	2.90	2.85	3.05	3.05	3.00	U3.10S	3.05
U3.05S	3.15	3.00	2.95	U2.95N	2.80F	3.05	3.00	3.20	A	A	3.15	A	2.90	2.95	3.15	3.15	3.00	3.20	U3.05S
3.00	3.15	3.00	C	3.05	C	A	A	3.00	2.95	3.05	3.10	2.95	2.90	A	A	S	3.05	SU3.10S	AU3.05S
AU3.10S	3.00N	U3.10M	A	3.15	3.05	A	AU2.75S	3.05	A	A	AU2.95S	3.05	A	3.00	3.15	U3.00S	3.05	2.90	SU2.85S
U3.00	SU2.90N	2.90	3.05	3.05	2.80	3.05	3.05	A	2.80	3.20	2.95	3.05	3.05	A	A	3.05	J3.10S	3.15	A
AU2.75F	F	F	3.00N	2.95F	U3.05F	A	A	A	A	A	A	3.10	A	A	3.00	2.90	3.00	J2.90S	A
A	FU2.95	FU2.85F	F	2.75F	2.85	2.90	2.95	A	3.30	U2.90R	A	2.90	3.05	3.10	3.00	A	A	A	3.30
2.95	3.00	3.00	3.00	2.95	2.85	J3.10S	3.30	A	J3.15R	A	R	2.85	2.80	2.95	2.90	3.15	A	3.00	AU3.05S
3.05	2.95	2.95	2.95	2.95	2.95	2.95	2.95	3.10	A	2.85	2.90	2.80	2.90	3.05	3.05	3.05	3.15	3.20	3.10
2.95	2.90	2.95	2.85	U3.00S	3.10	2.90	3.05	3.10	2.90	3.00	3.10	2.80	3.05	3.05	U2.90S	2.85	3.05	A	U3.10S
2.90	2.85	2.85	2.95	2.90	3.10	A	A	2.85	2.70	A	2.75	2.60	A	3.00	3.00	3.10	A	2.90	2.85
C	A	A	2.70	U2.80F	2.80	J2.90R	3.40	2.65	2.65	2.90	2.80	2.95	3.05	3.05	A	3.15	A	A	3.30
2.75	2.80	U2.80N	2.80	U2.90F	A	3.05	A	2.70	A	2.85	3.25	3.20	3.00	3.00	3.20	3.00	2.90	3.10	3.30
U3.10S	FU2.85	FU3.00F	3.30F	3.10	3.05	3.10	U3.00C	3.10	3.05	3.05	3.05	U2.90C	U2.85S	U3.05S	U3.05S	C	3.15	AU3.10S	U3.05R
3.10	3.20	3.00F	3.00A	3.05N	2.90	U3.05R	U3.10R	3.10	A	3.10	A	3.10	2.90	U2.95R	2.90	U3.05R	A	A	3.45
U3.30C	U3.15N	3.20N	3.05	3.20	2.95	3.00	A	3.15	J3.30R	3.00	3.00	3.00	U2.85S	2.85	3.00	A	3.15	AU3.40S	3.30
U2.90F	AU3.10	FU3.05N	U3.00F	3.30	G	3.00	3.00	3.00	U3.10R	3.05	2.90	A	AU2.90S	2.85	2.70	2.80	3.05	A	AU3.10C
A	A	NU3.00N	U3.15F	3.00	2.95	3.20	U3.10C	U2.95C	A	R	3.05	U2.85R	U3.00S	3.00	A	A	A	3.05	A
2.95	U2.95F	U2.80N	U2.70N	U2.85N	3.20	2.65	F	A	A	2.95	3.00	3.50	G	A	A	A	A	A	2.90
2.85	2.80	2.95	2.85	3.00	U3.00S	3.05	2.75	U2.85R	2.85	3.10	U2.80R	2.80	2.80	2.85	2.80	U2.70R	2.80	U2.90S	3.15
U2.95S	2.95	2.90	2.80	3.00	2.90	3.10	2.80	C	2.90	3.00	A	G	A	A	3.00	3.05	3.05	3.15	3.15
2.95	2.90	3.10	2.90V	2.95	3.05	2.95	A	A	A	3.05	3.35	R	R	A	A	A	A	AU2.90S	3.00N
2.95	3.05	2.75	2.85	2.95	2.95	3.05	2.95	A	A	3.00	2.95	2.75	3.15	A	2.95	2.85	3.05	A	3.05

МЕЖДУНАРОДНЫЙ ГЕОФИЗИЧЕСКИЙ ГОД



(M3000) F1 Июнь 1963г.

Алма-Ата

76°55'E широта 43°15'N

ИОНОСФЕРНЫЕ ДАННЫЕ

поисковая частота 75°E

АКАДЕМИЯ НАУК КАЗ ССР

Кем составлена

Агеевой

Кем подсчитана

Милютинной

05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
3.70	A	A	A	4.10	U4.10S	A	A	3.95	A	A	A	L	A	L
	3.40	A	A	A	A	3.90	C	C	3.85	A	A	A	L	L
A	A	A	A	A	A	4.20	4.15	A	A	3.70	A	A	A	A
L	A	A	A	A	A	3.90	A	A	A	3.70	A	A	A	A
U3.85L	A	A	A	A	A	A	A	3.90	3.85	A	A	L	L	A
L	3.55	A	A	A	A	A	A	A	A	L	A	A	L	A
L	3.25	A	A	A	A	A	A	A	A	A	A	A	U3.60L	L
L	A	A	A	A	3.90	4.10	4.10	3.95	3.90	3.90	3.95	3.70	U3.75L	L
L	A	A	A	A	A	A	A	A	4.05	3.90	3.70	3.70	U3.80L	L
C	A	A	A	A	A	A	3.80	A	A	A	A	A	A	L
L	U3.60L	A	A	A	3.95	A	A	A	A	U3.75L	A	A	A	L
L	3.70	A	A	A	A	A	A	3.95	A	A	3.70	L	A	A
L	A	A	A	A	A	A	A	A	A	A	L	3.95	U3.95L	A
U3.35L	A	A	A	A	A	A	A	A	A	3.85	3.90	L	A	A
L	A	A	A	A	A	A	A	3.90	A	3.70	A	A	A	L
L	A	A	A	A	A	4.15	4.15	3.90	3.90	3.95	U3.40L	3.50	L	L
L	A	3.85	4.20	3.90	4.10	3.90	3.85	4.10	3.80	4.00	3.80	3.75	A	L
L	A	A	4.00	A	A	4.20	4.00	A	4.20	3.80	A	A	A	A
L	N	A	L	A	3.85	3.95	3.75	A	3.95	A	A	A	A	A
A	A	A	A	A	A	A	4.00	4.10	3.65	4.15	4.00	3.85	U3.65L	A
L	A	A	3.75	A	A	4.10	4.20	U3.65L	3.85	4.05	3.75	L	A	A
L	A	A	A	A	A	A	A	A	A	A	A	A	A	A
L	A	A	A	A	3.95	3.80	3.90	A	A	A	A	A	A	A
L	L	A	A	A	3.80H	3.95	C	A	A	A	A	C	A	A
L	A	A	A	A	U4.10C	A	A	R	A	A	A	A	A	A
3.50	A	A	A	A	A	3.80	3.85	3.80	4.00	A	A	A	A	A
U3.55L	U3.65L	3.80	3.85	A	3.90	4.10	4.20	3.95	A	3.70	3.85	3.75	3.55	A
3.35	A	A	C	C	C	A	4.15	A	A	A	A	A	A	A
L	3.40	3.25	A	A	A	A	4.15	4.15	4.05	A	A	A	A	A
L	A	A	A	A	A	A	3.75	A	A	3.75	A	3.50	A	A
3.45	3.60	3.80	3.90	3.95	3.95	4.00	4.00	3.95	3.85	3.80	3.75	3.75	3.60	
8	6	2	4	7	9	14	13	13	11	14	9	7	4	

МЕЖДУНАРОДНЫЙ ГЕОФИЗИЧЕСКИЙ ГОД



А/Ф КМ Июнь 1963г.

АКАДЕМИЯ НАУК КАЗ ССР

Алма-Ата

Кем. составитель Агеевой

76°55'E широта 43°15'N

ИОНОСФЕРНЫЕ ДАННЫЕ

Кем. подсчитана Гусаковой

полное время 75°E

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19						
C E300	AE260	AE300	A E275	E 220	A	A	A	175	190	A	A	195	I200A	I200A	A	A	A E240	A 210	E226	AE255	AE255A			
E295	AE250A	A	A E250A	205	230	A	A	A	A	A	C	C	A	A	A	A	A	A	A	AE250A	AE255A	A		
E320A	AE290A	A E260A	A	A	A	A	A	A	AE200A	190	A	A	A	220	A	A	A	A	A	A	AE240A	E285A	A	
A	A	A	A	A	240	A	A	A	AE190A	A	A	A	AE210A	A	A	A	A	A	A	AE240A	E275H	AE260A		
E250A	C	CE230A	AE290A	220	I225A	A	A	A	A	A	A	195	190	A	A	A	AE210A	AE250A	AE240A	AE275A	AE270A	AE265A		
E320A	A	AE300A	AE280A	210	E220A	A	A	A	A	A	A	A	A	A	200	A	A	A	AE230	AE250A	AE230A	AE245A		
E230A	AE255A	AE315A	AE320A	AE270A	235	A	A	A	A	A	A	A	A	A	A	A	A	A	230	AE250A	AE265A	AE275A	AE250A	
E270A	AE260A	AE260A	AE280A	AE225A	AE245A	A	A	A	A	175	170	190	200	195	210	E205A	I200A	AE205A	A	AE225A	AE235A	AE240A		
E210A	AE235A	AE220A	AE245A	E 250	E240A	A	A	A	A	A	A	175	205	200	200	210	E215A	AE250A	AE275A	AE270A	AE240A	AE250A		
E245A	E2230	AE245A	CE260A	C	A	A	A	A	I200A	I200A	185	A	A	A	A	A	A	A	A	A	AE240A	E285A	C	
AE260A	AE275A	AE225A	A	225	210	A	A	A	190	A	A	A	AE220A	AE200A	A	A	A	A	A	AE260A	AE280A	AE275A	AE275A	
270	E230	AE250A	AE245A	245	220	215	A	A	A	A	A	A	175	A	A	210	A	A	I235A	AE220A	A	A		
A	AE320A	A	250	A	A	A	A	A	A	A	A	A	A	A	A	190	210	A	A	A	A	A		
AE255A	AE310A	E305A	AE275A	230	A	A	A	A	A	A	A	A	A	A	200	A	A	A	A	AE235A	AE300A	AE250A	AE240A	
E225A	250	E240A	AE250A	AE270A	A	A	A	A	A	I175A	175	200	E205A	225	A	AE200A	AE230A	AE290A	AE275A					
E255A	AE250A	AE250A	AE245A	260	230	A	A	A	A	180	175	170	185	190	I195A	I190A	195	210	225	E225A	230	225	E275A	
E250A	AE250A	AE260A	AE265A	250	235	I220A	210	I205A	200	180	170	190	180	195	195	195	240	I235A	235	A	AE265A	AE280A		
E240E	E230A	AE250A	AE250A	280	235	A	A	200	A	A	180	190	I200A	200	200	A	A	A	A	A	A	A	C	
C	A	A	AE280A	230	215	A	A	A	A	195	175	190	I195A	A	A	A	A	A	A	A	AE200A	AE250A	AE255A	
E285	AE285A	AE245A	AE285A	280	A	A	A	A	A	A	A	245	185	210	180	190	210	220	230	E230A	AE285A	AE350A	AE250A	
E225	AE255A	AE250E	AE250A	AE235A	AE250A	A	A	AE210A	I200A	I200A	175	180	175	195	200	195	190	A	A	AE225A	AE235A	AE260A		
E235A	AE225A	AE275A	AE250A	AE250A	245	A	A	A	A	A	A	A	A	A	220A	A	A	A	A	AE240A	AE295A	AE290A	AE250A	
E225A	AE245A	AE220A	AE280A	AE255A	245	A	A	A	190	I160A	155	I170A	I185A	I180A	A	A	A	A	AE250A	AE240A	AE240A	AE275A		
E325A	AE320A	AE250A	AE250A	AE275A	215	A	A	A	205H	210	200	A	A	A	AE250A	210	A	A	A	AE275A	AE300A			
A	AE250A	AE245A	AE225A	195	A	A	A	A	200	I190A	I195A	180	A	A	A	A	A	A	A	A	A	AE315A		
E250A	AE275A	AE300A	AE295A	E300A	240	A	A	A	A	A	215	230	200	A	A	A	A	A	A	A	A	AE245A	AE275A	
E280A	AE270A	AE250A	AE255A	260	250	210	200	255	I220A	195	200	195	200	I210A	245	I220A	A	A	A	AE250A	AE260A	AE285A	AE285A	
E310A	E255A	AE290A	AE300A	E265A	250	A	A	220	A	A	A	175	A	A	A	A	A	A	A	A	210	E255A	AE305A	A
AE260A	AE220A	AE250E	260	220	I190A	A	A	A	A	A	190	195	185	A	A	A	A	A	A	A	A	AE290A	AE275A	
E275A	E255A	AE330A	AE300A	E270A	235	A	A	A	A	A	A	A	A	A	195	I200A	225	A	A	A	AE250A	AE275A		
E250A	AE255A	AE250A	AE250A	AE260A	U230	210	205	35	10	20	20	15	20	15	20	15	15	15	E20					
22	23	25	24	28	25	9	2	5	9	11	16	10	16	13	17	11	9	8	8	15	23	22	23	
E235	E230	E250	E250	E250	220	210		235	200	200	175	175	180	190	195	190	200	210	230	E230	E230	E245	E250	
E285	E210	E290	E300	E275	240	220		200	190	180	195	20	200	205	215	205	215	225	E250	E250	E275	E285	E275	

Шаг сетки по времени 1.0 Мин по 18.0 Мин 20 сек. Автоматическая



4°22' КМ ИЮНЬ 1963г.

Алма-Ата

76°55' широта 43°15' N

ИОНОСФЕРНЫЕ ДАННЫЕ

75°E

АКАДЕМИЯ НАУК КАЗ ССР

КАРПЕНКО

МЦАЮТНСО

400	I375A	I345A	I295A	300	S	A	300	350	I290A	295	I315A	300	I275A	255
	305	A	A	A	A	330	C	C	270	290	I295A	325	L	L
A	A	300	I305A	I315A	315	340	460	I305A	345	275	A	A	A	
350	335	A	A	A	300	355	300	325	375	380	300	A	A	A
290	255	280	270	320	305	I335A	I340A	300	335	300	280	290	250	
L	290	275	A	A	A	280	300	I300A	300	400	310	A	L	250
280	345	360	A	A	A	A	410	425	430	385	320	300	A	310
260	A	A	A	270	350	320	375	325	340	290	300	290	260	240
345	295	A	280	A	A	275	A	310	310	270	280	290	250	
C	A	A	305	315	300	295	355	325	A	A	325	300	280	A
260	900	A	A	390	300	A	I315A	I310A	315	300	I305A	305	260	L
L	280	300	I300A	A	A	315	290	300	I315A	I320A	300	280	265	
290	A	A	A	A	A	A	290	I305A	300	305	325	310	295	
355	330	300	I300A	I295A	255	325	315	330	300	295	310	A	A	
330	270	250	I270A	320	I320A	325	330	340	305	275	280	I280A	240	
L	L	300	290	270	I300A	335	310	350	325	290	300	300	275	260
L	A	290	275	315	300	285	350	300	300	330	335	300	I275A	240
L	A	A	410	450	330	420	415	A	355	380	365	I355A	310	A
L	250	245	L	355	325	350	300	290	295	300	I275A	A	A	A
A	A	A	355	I360A	320	I260A	305	365	375	300	360	325	280	
	290	295	310	275	300	300	290	385	340	300	300	300	265	
320	300	I285A	285	I285A	290	I295A	290	375	385	330	300	A	A	
L	305	I295A	270	265	295	350	355	340	340	300	I275A	280	A	
L	410	310	345	295	300	320	I295A	A	400	340	350	340	E300A	
L	320	I275A	275	320	340	R	300	340	305	A	I330A	A	A	
275	410	435	A	A	405	360	290	455	A	A	A	A	A	A
295	250	360	335	330	285	355	350	340	340	340	350	350	295	A
330	290	350	350	345	290	A	455	A	A	360	300	300	265	255
L	300	315	A	A	A	340	290	360	320	A	A	A	I305A	A
315	290	320	A	A	305	315	410	360	A	375	350	320	A	A
280	55	40	40	65	40	30	50	65	50	50	45	30	30	30
	320	300	295	300	315	300	320	335	330	315	300	300	300	265
1	16	23	19	19	20	24	25	28	26	25	26	27	21	18
	290	290	280	270	295	300	300	300	310	300	295	300	290	260
	345	330	320	335	335	330	350	365	360	350	340	330	320	290

1.0

18.0 20 сек.

автоматическая

МЕЖДУНАРОДНЫЙ ГЕОФИЗИЧЕСКИЙ ГОД



А'Е КМ Июнь 1963г.

Алма-Ата

76°55'Е широта 43°15'N

ИОНОСФЕРНЫЕ ДАННЫЕ

полдень время 75°E

Академия Наук Каз ССР

Ком. составлено Агеевой

Ком. подсчитано Беллицкой

	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	E 100	100	95	95	90	90	90	90	90	90	95	95	100	100	100	A	A
	A A	95	95	90	90	90	A	C	C	A	A	A	A	95	A	A	A
	A 105	95	95	90	90	90	90	90	90	90	90	90	90	95	100	A	A
	A	95	90	90	90	90	90	A	A	A	A	A	A	A	100	A	A
	90	90	90	90	90	90	90	A	A	A	A	A	A	A	A	A	A
	A	95	95	90	90	90	90	90	190A	190A	90	190A	95	95	A	A	A
	A	A	95	95	90	90	90	90	90	90	90	190A	90	95	100	A	A
	100	95	95	90	90	90	190A	190A	90	90	90	95	100	100	100	A	A
E	A 100	95	90	90	90	90	90	90	90	90	190A	95	100	100	A	A	A
	C	A	95	90	90	90	90	90	90	90	190A	90	100	A	A	A	A
	100	95	95	90	90	90	90	90	90	90	90	95	100	100	3	A	A
	E 100	95	95	95	95	95	95	95	A	A	A	95	100	100	A	A	A
	B 100H	100	95	90	90	90	90	90	90	90	90	A	95	95	100	A	A
	A 100H	95	90	90	90	90	90	90	90	90	95	95	95	95	100	A	A
	B	95	95	90	90	90	90	90	90	90	95	95	100	100	100	A	A
	A 100	95	95	90	90	90	190A	90	90	90	90	90	95	A	A	A	E
	E 100	95	95	95	90	90	90	90	90	90	90	190A	95	95	B	A	E
	100	100	95	95	90	90	90	90	90	95	95	95	95	100	A	A	A
	100	95	95	90	85	90	90	90	90	90	90	95	95	100	100	A	A
	E 105	95	90	90	90	90	90	90	90	90	90	90	90	95	105	A	A
	A E 110A	95	90	90	90	90	90	A	A	90	90	90	90	95	E 105B	A	A
	A 100	100	95	95	90	90	90	90	90	90	90	95	95	100	100	A	A
	100	95	90	90	90	90	90	90	90	90	95	95	95	100	A	A	A
	A E 105A	100	95	95	90	90	90	90	90	95	95	105	105	105	E 110B	A	A
	100	100	95	95	90	90	90	90	90	90	90	95	100	E 110B E 120B	A	A	
	E 110B	110	105	100	100	95	95	100H	100	100	100	100	100	100	100	E	A
	E 105	100	100	95	95	95	95	95	95	100	95	100	100	100	110	A	A
	100	100	100	100	95	95	95	95	A	A	A	A	A	100	E 110E	A	A
E	E 105	100	100	95	95	95	100	100	100	100	100	100	100	105	110	A	A
	E 110B	105	100	100	100	100	100	A	A	A	100	100A	105	105	105	A	A
E	E	100	95	95	90	90	90	90	90	90	90	95	95	100	100	E	F
2	6	24	29	30	30	30	29	25	23	24	24	25	26	29	15	1	1

1.0

18.0

20 сек.

автоматическая

МЕЖДУНАРОДНЫЙ ГЕОФИЗИЧЕСКИЙ ГОД



№0 F2 КМ Июнь 1963г.

АКАДЕМИЯ НАУК КАЗ ССР

Алма-Ата

ИОНОСФЕРНЫЕ ДАННЫЕ

Ком. составлен Агеевой

76°55'E широта 43°15'N

полное время 75°E

Ком. вычислен Беллицкой

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
C	SU320	U370N	U350F	G	A	295	AU300S	S	A	G	S	A	300	AU305S	A	300	275	280	310	U305N	S	A	A	
325	310	S	300	290	285	310	A	270	A	A	330	C	C	275	295S	A	325	320	306	U300N	S	A	A	
S	AU340	FU335F	335F	A	A	300	A	A	316	G	G	AU345R	275	A	A	A	S	AU330S	U300S	A	A			
A	A	A	A	A	360	340	A	A	AU300R	355	500	335	G	395G	300	A	A	A	290	U310S	U305S	A	S	
U295S	C	C	260	300N	300	275	290	280	320	305	A	A	305	335	U300R	U280R	295	U275S	305	320	U300N	S	U310S	
A	A	AU320	FU300F	G	290	U295R	A	A	280	300	305	A	290	G	310	A	R	300	300	305	300	300	300	
300	315	360F	37E	330	345	360	A	A	A	A	A	G	R	325	300	A	310	300	335	310	355	U340S		
346	340	330	315	265	275	325	A	A	280	U320S	U320S	U375S	325	340	300	300	310	U290S	300	300	310	U310S	U300S	
U300S	285	305	320	U315N	350F	300	305	275	A	A	285	A	325	315	285	285	305	275	U300S	320	U350S	295	315N	
310	285	310	C	300	C	A	A	305	320	300	295	365G	325	A	A	S	300	SU295S	AU300S	U310N	A			
AU295S	310N	U290N	A	280	300	A	A	G	300	A	A	AU315S	300	A	305	280	U305S	300	325	SU340S				
U310S	U330N	325	300	300	G	300	300	A	345	275	315	300	300	A	A	300	U290S	280	A	AU305S	A	A		
AU360F	F	F	310N	315F	A	A	A	A	A	A	A	295	A	A	310	330	310	U325S	A	A	A	N	A	
A	FU320	FU340F	F	360F	340	325	320	A	260	U325S	A	330	300	295	310	A	A	A	275	U340N	U310N	U290S		
320	310	305	310	320	335	U290S	265	A	325G	A	R	340	350	315	330	280	A	305	AU300S	A	330	U315S		
300	315	320	320	320	315	320	315	290	A	335	325	350	325	300	300	300	280	275	295	290	310	300	320	
315	325	320	335	U310S	295	325	300	295	325	305	290	350	300	300	U330S	3	300	AU290S	U270S	U285S	U330S	350		
325	340	340	315	330	295	A	A	G	G	S	G	G	A	G	G	G	A	325	340	A	A	A	C	
C	A	A	370	U350F	345	U330R	250	G	375G	330	350	320	300	300	A	285	A	A	A	265	U265S	345	U335S	
360	345	U345N	355	U325F	A	300	A	370	A	340	270	G	G	G	G	330	295	265	U295S	340	FU320S			
U290S	FU340	FU310F	265F	290	300	295	U310C	295	300	300	300	G	U340S	U300S	U300S	C	280	AU290S	U300R	U290R	320			
290	275	310F	310F	300N	325	U300R	U295R	295	A	295	A	290	A	A	330	U300R	A	A	245	U295S	U325S	CU290C		
U260C	U280N	275N	300	275	320	305	A	285	U260R	310G	G	G	U340S	340	305	A	285	AU250S	260	U300S	A	310		
U330F	AU290	FU300N	U305F	265	G	310	350G	U295R	300	330	A	A	A	A	340	370	345	300	A	CU290C	AU320F			
A	A	NU305N	U280F	305	320	275	U290C	U320C	A	R	390	U340R	U305S	305	A	A	A	300	A	A	A	U350F		
320	U320R	U345N	U370N	U335M	275	G	G	A	A	G	G	G	G	A	A	A	A	A	A	325	A	A	315	320
340	345	320	335	310	U310S	300	360	U340R	335	295	U355R	350	345	340	345	6	350	U325S	285	U310S	305	U320S	325	
U320S	315	325	350	310	330	290	355	G	G	305	A	G	A	A	G	300	300	285	280	U295S	U330S	U325S	350	
315	330	290	325N	320	300	320	A	A	A	345G	295G	R	R	A	A	A	A	AU330S	305N	AU310S	340			
320	300	360	340	320	315	300	320	A	A	305	315	G	G	A	G	F	F	A	300	300	325	320	310	
315	315	320	320	310	310	300	300	295	320	305	315	310	325	315	300	300	305	290	300	300	305	310	320	
21	20	23	27	27	24	23	18	14	13	21	17	14	14	16	20	17	16	16	22	22	23	18	23	

МЕЖДУНАРОДНЫЙ ГЕОФИЗИЧЕСКИЙ ГОД



Типы Es ИЮНЬ 1963г.

АКАДЕМИЯ НАУК КАЗ ССР

Алма-Ата

Кем составлена

Агеевой

76°55' E широта 43°15' N

ИОНОСФЕРНЫЕ ДАННЫЕ

полное время 76° E

Кем подсчитана

Час	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
f6	f4	f2	f4		c1	c4	c4	c4	c2	c2	c3	c2	c2	c2	c2	c2	c3	c2	e2	e1	f2	f3	f2		
f6	f2	f4	f4	e2	e2	c3	c4	c4	c3	c3	e2	e2	e2	e3	e4	e5	e3	e4	e4	e4	f3	f4	f5		
f6	f5	f3	f4	e2	c4	c4	c4	c4	e2	c2	c2	e2	c3	c2	c2	e3	c4	c3	e4	e5	f3	f7	f5		
f7	f6	f7	f6	f5	e2	c4	c3	c3	c4	c2	c2	e2	e3	e3	e2	e2	e4	e6	e3	e3	f4	f6	f5		
f4			f2	f4	c1e1	c4	c5	c2	c2e1	c3	c3	e3	e2	e3	e3	e4	e4	c2e1	e4	e4	f4	f5	f5		
f5	f6	f5	f3	f3	e2	c2	c3	c2	c3e1	c2	c2	c3	e3	e3	c1	c2e1	c5	c4	e5	e6	f4	f6	f3		
f2	f4	f4	f4	e1	e2	c4	c3	c3	c4	c2	c2	c2	c2	c3	c3	e3	c3	c2	c5e1	e3	e3	f4	f7	f2	
f4	f3	f3	f3	f4	c5	c4	c3e1	c4	e2	c2	c2e1	e1e1	e1	e2	h1e1	e2	c2	c2	e2	e2	e3	e1	f2	f2	
f3	f2	f2	e1	e1	c3e1	c5	c4	c3	c3	c2	c2	e2	e2	c2	e4	e2e1	c2	c2e1	c3	e3	e3	e2	f7	f3	
f2	f3	f1		f2		c4e1	c2	c3	c3	c2	c1	c2	c2	c3	c2	e2	c3	c3	e3	e3	e2	f3	f6	f4	
f6	f5	f5	f2	f4	c1	c2	c4	c3	c2	c2	c3	c4	c4	c2	c1	c3	c2	c2	c4	e3	f3	f5	f5		
f3	f5	f2	f2		c2	e1c1	c2	c4	c3	c2	c3	c2	e2	e3	e3	c2	c2	c5	e4	e4	f2	f6	f4		
f4	f5	f4	f3	e1	c4	c6	c4	c3	c4	c2	c4	c2	c3	c2	e3	e2	c2	c2	c7	e3	f4	f6	f5		
f4	f2	f4	f7	e2	c1	c4	c5	c3	c3	c3	c2	c2	c2	c3	c2	c2	c3	c4	c5	e3	f2	f4	f3		
f2	f2	f2	f2	f2	c6	c6	c2	c4	c2	c2	c2	c2	c1	c2e1	c1	c2	c3	c4	c3	e2	f7	f6	f6		
f6	f2	f2	f1	e1	e1c2	c5	c3	c3	c3	c2	c1e1	c1	c1	c1e1	c4	c2	c1	e2	e2	e3	e1	f7			
f2	f2	f4	f2	e1	c2	c3	c3	c3	c2	c1	c1	c1	c1	c2	c2	e2c1	c3	c4	c3e2	e7	f5	f4	f2		
	f1	f1	f2	c1	c1	c3	c4	e1c2	c2	c4	c1	c1	c4	c1		c3e1	c4	c5	e5	e6	f7	f6			
	f4	f3	f3	f4	c2e1	c2	c3	c3	c2	c3	c1	c2	c2	c2	c3	c3	c3	c6	c5	e7	e3	f3	f2		
f2	f2	f2	f3	e2	c6	c4	c3	c2	c4	c2	c2	c2	c1	c1	c2	c1	c3	e2c2	c4	e6	f6	f6	f2		
f2	f2	f1	f2	e2	c6e1	c4	e2	c2	c2	c3	c2	e1	e2	c1	e2	c1	c2	c5	c5	e2	f2	f3	f3		
f3	f2	f2	f2	e3	c2	c3	c4	c4	c3	c3	c3	c2	c3	c3	h1e1	c3	c4	c4	c5	e5	f6	f5	f4		
f5	f3	f2	f2	f3	c2	c2	c3	c2	c2	c1	c2	c2	c2	c2	c3	c2	c5	c4	e3	e4	e2	f4	f4		
f4	f6	f5	f3	e3	e1c1	c8	c4	c3	c1	c1	c1	c2	c2	c3	c2	c3	c2	c2	e2	e2	f4	f6	f2		
f4	f4	f3	f3	f2	c1e1	c4	c3	c2	c2	c2	c2	c1	c1	c2	c2	c3	c3	c5	c5	e5	e5	e3	f4	f2	
f3	f5	f3	f2	f2	c1e1	c3	c4	c4	c3	c1	c1	c1	h1	c3	c3	c4	c6	c5	c5	e6	f6	f3	f4		
f3	f2	f3	f2	e1	c2	c3	c2	c3	c2	c2	c1	c1	h1	c2	c1	c2	c4	c4	c5	e3	f7	f5	f4		
f5	f2	f2	f2	f2	c2	c2	c2	c1	c2	c2	c2	c2	e2	e2	e2c2	e3	e3	c4	c3	e1	f2	f4	f5		
f2	f3	f1			c1	c2	c3	c3	c3	c2	c2	c2	c1	c3	c2	c3	c3	c6	c6	e4	f4	f3	f3		
f3	f3	f3	f2	f2	c1	c4	c5	c3	c3	c3	c3	e2	e2	e3	c1	e3	c2	c5	c4	e5	f6	f6	f6		