

KG
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385

15G 11365, 385

Shelf 54 4



NG 11365.385





Thursday 20th June

Had a very good day. Went to the beach at 10 AM. The weather was very good. The water was very clear. The sand was very soft. The sun was very bright. The sky was very blue. The clouds were very white. The birds were very loud. The children were very happy. The dogs were very friendly. The cats were very cute. The fish were very colorful. The shells were very interesting. The rocks were very smooth. The tide was very low. The waves were very gentle. The breeze was very cool. The smell was very fresh. The view was very beautiful. The day was very pleasant. The evening was very nice. The night was very quiet. The morning was very bright. The afternoon was very warm. The whole day was very good.

All the afternoon I was very busy. I went to the beach at 10 AM. The weather was very good. The water was very clear. The sand was very soft. The sun was very bright. The sky was very blue. The clouds were very white. The birds were very loud. The children were very happy. The dogs were very friendly. The cats were very cute. The fish were very colorful. The shells were very interesting. The rocks were very smooth. The tide was very low. The waves were very gentle. The breeze was very cool. The smell was very fresh. The view was very beautiful. The day was very pleasant. The evening was very nice. The night was very quiet. The morning was very bright. The afternoon was very warm. The whole day was very good.

Friday 21st June

Had a very good day. Went to the beach at 10 AM. The weather was very good. The water was very clear. The sand was very soft. The sun was very bright. The sky was very blue. The clouds were very white. The birds were very loud. The children were very happy. The dogs were very friendly. The cats were very cute. The fish were very colorful. The shells were very interesting. The rocks were very smooth. The tide was very low. The waves were very gentle. The breeze was very cool. The smell was very fresh. The view was very beautiful. The day was very pleasant. The evening was very nice. The night was very quiet. The morning was very bright. The afternoon was very warm. The whole day was very good.

Thursday, 20th June,

Word was received from Paris that they would be ready at 9 P.M. for experimental exchange of time signals, they having to-day received & mounted a new Chronograph.

At the appointed hour the Paris wire was put into connection with the Observatory at Brest & without much delay signals were successfully exchanged and recorded upon Chronograph.

Monsieur "Bureau Directeur de l'Administration des lignes Télégraphiques" and Monsieur Descamps of the French cable Co's staff were present during the experiments, the latter acting as Operator with the Morse apparatus.

Notes in regard to exchange of signals with Paris
1st min brak in sheet 15^h 35^m.

At 15^h 52^m Paris asks if Brest is ready to receive signals. 15^h 53^m Brest answers "Yes".

Paris begins to send signals every five secondes at 15^h 57^m and stops at 15^h 59^m. (Rattle & probably first signal, not received on Chronograph as hand switch was not turned over soon enough).

Thursday 20th June

Paris says; First signal has been given at 16^h 25^m 0^s. correction to clock, -0^m 15^s 0

After waiting a few minutes to arrange connections, Paris says "Ready to receive your signals."

Brest begins to send at 16^h 13^m making signal every five seconds. After sending three or four without recording them on chronograph turned switch over and sent for two minutes, first recorded signal being at about 16^h 14^m 25^s

Paris says every thing has worked well will exchanged at eight and eleven tomorrow, Good night.

After preceding experiments has been finished the following observation were made to determine the clock and instrumental corrections the Chronograph being by break circuit chronometer.

Same sheet as for signals from Paris - "Sheet No 1"

1st min break = 15^h 35^m

γ Herculis W 5th

level at 16^h 42^m

W 61.0 E 82.0

85.5 57.5

Thursday 20th June.

K Ophiuchi W 5^{ts}

L Herculis W 5^{ts}

level at 17^h 0^m

W 86.0 E 57.5

63.0 80.5

Reversed to lamp East.

L' Herculis E 5^{ts}

level at 17^h 12^m

W 62.0 E 82.5

84.5 60.0

966 L.C E 5^{ts}

level at 17^h 27^m

W 86.5 E 59.0

W Draw. W. E 5^{ts}

carb. passing in the street just after obsn was finished put star into a state of.

Sheet No 1 last min brk 17^h 40^m

level at 17^h 42^m

W 66.0 E 80.5

84.5 62.0

Sheet No 2 first min brk 17^h 48^m

Thursday 20th June

y Draw E 5^{ts}

level at 17^h 56^m

W 84.5 E 63.0

67.0 80.5

Sheet N^o 2 last min bk 18^h 20^m.

Friday 21st June

In accordance with last night's appointment every thing was ready for exchange of Signals with Paris at 8 P.M. Word was then received that experiments would begin at 9 P.M. Waited one hour and then had Paris joined up with Observatory.

Received his messages well, but he could not receive any thing from us. At the end of three quarters of an hour he sent word that a new Morse apparatus had been substituted for their old one, and that our messages were well received.

Paris seemed to have trouble in making proper connections for sending time

Friday 21st June.

signals, but after an hour more had passed
succeeded in sending us

1st set from Paris 16^h 12^m to 16^h 14^m

2 " " " 16 19 " 16 21

1st sent to Paris 16^h 33^m to 16^h 35^m

The above were received on Sheet N^o 1 which contains
also the comparison of our clock and chronometer

Sheet N^o 1 First min brk 14^h 30^m

" " " Last " " 16^h 40^m

Paris sent word "Will be ready tomorrow night
at eight o'clock."

Raining - No observations for time -
Monsieur Descamps operator.

Saturday, 22nd June.

Sheet No 1. 1st min at 14^h 19^m As
turned from 21" to 32.

θ Butis W 5^{ts}
level W at 14. 24
W 85.0 E 60.0

ε Urs. Min W. W 6 D E F G
level W at 14^h 33^m
W 66.5 E 79.5
83.5 62.5

ε Butis W 5^{ts}

Comparison of Clock and Chronometer - 1st min
brk at 14^h 44^m circuit interrupted a few minutes

β Butis W 5^{ts}
level W at 15^h 0^m
W 85.0 E 63.0
67.0 81.0

Paris has called and said it was cloudy there.

Saturday 22 June

but think they would go through the programme as understood with Professor Hilgard.

at 15.4 Paris gave three rattles and began sending signals one every 5^s. Turned over switch at end of 2nd rattle consequently only on rattle will be found on chronograph.

Told Paris signals had been well received, but that he had forgotten the terminal rattles.

Paris said "yes" he had forgotten them and in consequence had failed to follow programme. He then said he would begin again and follow it exactly.

Brest said the signals he had received were beautifully recorded and would answer very well.

Paris said "good" and expressed his readiness to receive signals from Brest.

Sent signals preceded by three rattle (one only being recorded on our Chronograph) for three minutes from 15^h to 15^h 19^m using pocket watch to make the intervals of 5^s.

Saturday 22 June
 Paris says Well received and, Good night
 Brest said Good night.

Reversed to Lamp East

level E at $15^h 25^m$

W 67.0 E 82.5

88.5 61.5

L for Bor E 5^s

level E at $15^h 35^m$

W 88.0 E 62.0

67.0 83.0

L Serpenter E 5^s

Sheet N^o 1. last min bk. $15^h 46^m$

Weights shipped to flow and chronograph
 stopped

Sheet N^o 2 First $15^h 57^m$

Comparison of Clock and chronometer. Clock
 on alone for a minute: Chronometer put on
 after clock had made bk at $16^h 0^m$

Saturday 22 June

G₂ 2320 M. E 5⁵

level E at 16^h 10.

W 67.0 E 85.0

90.0 . 62.5

ε Herculis E 5⁵

level E at 16.17

W 90.0 E 62.0

64.5 87.5

α Herculis E E D C B A

level E at 17^h 0^m

W 67.5 E 86.5

90.0 64.0

δ Herculis E 5⁵

level E at 17^h 18^m

W 89.5 E 65.0

68.0 86.5

β Draconis E 5⁵

level E at 17^h 33^m

W 68.5 E 88.0

90.0 66.5

W

Saturday 22 June

W Draw Ul. E 5^h 7, lost

Y Draw Ul. E 5^h

Y Draw E 5^h

level E at 17^h 56^m

W 89.5 E 67.0

70.0 87.0

Last min brk sheet No 2 at 17.57.

1st min, brk. sheet No 3 at 17 59

22 H. L. C E 5^h B, lost.

level E at 18^h 8^m

W 70.0 E 86.5

90.0 67.0

Weight shipped and chronograph stopped

Comparison of clock and chronograph.

Chronograph alone 1st min brk at 18^h 18^m

Clock alone 1st " " " 18 25

Clock Chron. 1st " " " 18 30.

Monday 24th June.

Got Paris at 15^h 3^m.

Sheet N^o 1 First min at 15^h 2^m

Comparison of Clock and Chronometer; 1st min
mark of Clock 15^h 5^m.

Paris says at 15^h 6^m, We are going to send
signals.

From 15^h 12^m to 15^h 14^m signals received
from Paris

From 15^h 15^m to 15^h 17^m signals sent to Paris
Paris says signals well received.

Best songs after this as it will be more convenient to
obtain the line at nine o'clock we had better exchange
at that hour and at eleven.

Paris says "Very good"

Cloudy at both Paris and Brest.

Comparison of Clock and Chronometer. Last min of
Clock 15^h 30^m

At 16^h 43^m received signals from Paris for 2 min.

At 16^h 47^m sent signals for 2^m min to Paris.

Monday 24th June.

Comparison of Clock and Chronometer.

Five minutes mark of Clock at 16^h 50^m

Paris reported Clearing weather - Good night

Chronograph running while waiting for connection with Greenwich. Clock on alone for few minutes

1st five minute at 17^h 15^m

Chronometer alone 1st min at 17^h 21^m

At 17^h 25^m connection through to Greenwich

They having previously informed us by telegram that they had no talking apparatus at Obsy, we were prepared to receive without warning them, signals which began to come at 17^h 26^m and stopped at 17^h 31^m

Brest sent from 17^h 32^m till 17^h 35^m

Cloudy at Brest.

Greenwich signals were arbitrary ones but ~~at~~ at the beginning of each minute their Clock was put into circuit for ten seconds.

Tuesday 25th June.

Sheet No 1. First min bk; Rate seem to have changed in consequence adjusted break circuit apparatus of Clock.

Clock and chronometer. Comparison

Chron alone 1st min 8^h 38^m

Clock " " 8^h 33^m

Clock and Chronometer. 8^h 35^m to 8^h 34^m

Weather. Cloudy. No observations

At 9^h 15^m P.M. Connected through to Paris
Compared Clock and chronometer; and exchanged with
Paris as usu

Last min 15^h 26^m

Cloudy at Paris. No exchange at eleven o'clock.

Cleared off suddenly at 10.45 P.M.

Calm. Therm (Interior) 14.5 ^{Centi}

First min bk at 17^h 1^m

L' Hercules E lost from clids

Cleared off. Suddenly but clouded up almost immediately
afterwards.

Tuesday 25 June

Connected through to Greenwich at 11.30 Greenwich time.

Signals successfully exchanged.

Last min bk in sheet N^o 1 at 17^h 45^m

Wednesday 26 June.

Therm 16.°

Sheet N^o 1. First min bk after long rattle 15^h 0^m
Comparison of Clock and Chronometer. 1st Five min
mark of clock 15^h 5^m

Got Paris at 15^h 18^m

Received and sent, set of signals

Paris says Please send another set as our apparatus was not in order.

Second set sent to Paris.

Paris "Well received, Weather cloudy now but variable
We'll exchange at half after eleven.

Brest, That will be impossible as we exchange with Greenwich at precisely that hour.

Paris very good. Eleven O'clock then Paris time.

Comparison of Clock and Chronometer. First five min
mark of clock at 15^h 40^m

Wednesday 26th June.

Weather cloudy but

γ Urs min U.C. E 5^h

(add 0^h.2 to D 3)

Level E at 15^h 25^m

W 78.5 E 64.0

64.0 78.5

Many stars lost from clouds.

τ Herculis E 5^h (D very fl).

W 66.5 E 79.0 Level E at 16^h 21^m

83.0 62.5

A D₁ U. E 5^h

Level E at 16^h 35

W. 84.0 E 63.0

64.5 82.5

γ Herulis E 5^h

Clock and Chron. Comparison

First five min mark of Clock at 16^h.45^m

Sheet N^o 2 1st min at 16.48.

Clock Five min mark at 16^h 50^m

L' Herculis E lost from clds.

Wednesday 26th June

At 16^h 57. Connected through to Paris

Paris sends for 2 min.

Brest sends for 2 min

Cloudy at Paris

L' Heraults E 5^h 5

Level E at 17^h 11^m

W. 64.5 E 84.0

82.0. 66.5

B Dramm E 5^h 5

Level E at 17^h 30^m

W 83.5 E 64.5

65.0. 83.0

Reversed to Lp. West

At 17^h 34.^m signals exchanged with Greenwich

Cloudy

Sheet No 3 1st min. bk 18

Clock and chronometer comparison

1st Five min mark of Clock at 18^h 15^m

L Lyrae W BLD E rest lost clds.

Level W at 18^h 35^m

W 89.5 E 86.0

86.0 63.5

Transit No. 6
E. L. Abner.

Mobile
1861 Jan 27

Before Exchanges.

Collimation.

Star.	Time.	b.	b	c
ϵ Cassio. U. b.	2 ^h 17 ^m 41 ^s	-0.132	+2.536	-0.052
48 Cephei U. b.	3 2 53	-0.246	+4.520	-0.054
α Camelo. U. b.	4 40 19	-0.146	+2.468	-0.059
		-0.524	9.524	-0.055

Block Correction and Azimuthal Deviation.

$\gamma = 4^{\circ} 0'$
 $\theta = -7.689$

Star.	Sample.	(w_0)	w'_0	A	A'_0	A^2	A_a	$\Delta\theta$
ϵ Cassiope.	E + W.	-7.764	-0.075	-1.493	+0.102	2.230	-0.219	+0.144 - 0.94
γ bet.	W	-7.698	-0.009	+0.471	-0.004	0.222	+0.069	-0.078 + 128
α bet.	W	-7.664	+0.025	+0.457	+0.011	0.209	+0.067	-0.042 + 0.92
48 Cephei.	W + E	-8.162	-0.473	-3.280	+1.552	10.758	-0.481	+0.008 + 0.42
ζ Aurigae	E	-7.682	+0.007	+0.189	+0.001	0.036	+0.028	-0.021 + 0.71
γ Tauri.	E.	-7.571	+0.118	+0.275	+0.032	0.076	+0.040	+0.078 - 0.28
ϵ Tauri.	E.	-7.599	+0.090	+0.217	+0.020	0.047	+0.032	+0.058 - 0.08
Aldebaran.	E	-7.520	+0.169	+0.266	+0.044	0.068	+0.038	+0.131 - 0.81
α Camelopard.	E + W	-7.956	-0.267	-1.430	+0.382	2.045	-0.210	-0.057 + 1.07
ϵ Aurigae.	W	-7.611	+0.078	-0.047	-0.004	0.002	-0.007	+0.085 - 0.35
η Aurigae.	W	-7.609	+0.080	+0.277	+0.022	0.007	+0.041	+0.039 + 0.11
Capella.	W	-7.553	+0.136	-0.375	-0.051	0.141	-0.055	+0.191 - 1.41
β Tauri.	E	-7.572	+0.117	+0.044	+0.005	0.002	+0.006	+0.111 - 0.61
		-0.004	-4.435	+2.112	15.913	-0.651	+0.647	+0.05

$$1.11394 \quad 7.6022 \quad 0.646872 + 0.001 \quad 1.513$$

$$a + 0.147 + 0.650 + 0.0050 + 2.111 \quad 14.400$$

$$\Delta t - 7.639 + 0.646 \quad 9.16613 \quad 0.32449 \quad 1.15836$$

Transit No. 8
Els. Observer.

Mobile
1861 Jan. 27 Before Exchange.

Star.	ι Cassiopeae.		γ bet.	α bet.	48 Cephei.		ζ Aries	γ Tauri.
Lamps.	E	W	W	W	W	N. 6. E	E	E
M.	2 16 50.622	18 35.505	2 36 15.224	2 55 10.139	3 1 17.233	4 16.450	3 7 4.281	4 12 2.697
Therac.	$\frac{Y}{5} - E$	$\frac{D}{3} - \frac{Y}{5}$	$B_1 - \frac{Y}{5}$	$B_1 - \frac{Y}{5}$	$B_1 - \frac{Y}{5}$	$\frac{D}{4} - B_1$	$\frac{Y}{5} - B_1$	$\frac{Y}{5} - B_1$
Y	+22.9831	-18.2535			+22.9600	-16.7783		
$\log Y$	1.36141	1.26135 _n			1.36097	1.22475 _n		
$\log \rho$								
$\log \delta$								
Sec δ	0.40411	0.40411			0.65513	0.65513		
$\log R$	1.76552	1.66546 _n			2.01610	1.87958 _n		
R	+58.280	-46.287			+103.777	-75.837		
b	-0.030	-0.055	-0.055	+0.050	+0.050	+0.020	+0.020	+0.015
α	2 17 41.164	2 36 7.410	2 55 2.442		3 2 52.679	3 6 56.634	4 11 55.205	
δ	+66° 46' 27"	+2° 38' 52"	+3° 32' 30"		+77° 13' 4"	+20° 31' 38"	+15° 17' 20"	
$\rho - \delta$	-36 4 51	+28 2 44	+27 9 6		-46 31 28	+10 9 58	+15 24 16	
A	-1 493	+0.471	+0.457		-3.280	+0.189	+0.275	
B	+2.049	+0.884	+0.892		+3.110	+1.051	+0.999	
b	+2 536	+1.001	+1.002		+4.520	+1.068	+1.037	
K	-0.045	-0.045	-0.018	-0.018	-0.080	-0.080	-0.019	-0.018
Rb_0	-0.062	-0.113	-0.048	+0.045	+0.156	+0.062	+0.021	+0.015
Y	2 17 48.902	2 17 49.218	2 36 15.224	2 55 10.139	3 3 1.010	3 3 0.613	3 7 4.281	4 12 2.697
t	2 17 48.795	2 17 49.060	2 36 15.158	2 55 10.166	3 3 1.086	3 3 0.595	3 7 4.283	4 12 2.674
w	-7.631	-7.896	-7.748	-7.724	-8.407	-7.916	-7.649	-7.489
C_0	-0.132	-0.050	-0.050		-0.246	-0.053	-0.052	
w_0	-7.764	-7.698	-7.674		-8.162	-7.702	-7.541	
w_0	"	"	"	"	"	"	"	"

Transit No. 6
E. Observer.

Mobile
1861 Jan 27

Before Exchange.

E Tauri.	Aldbaran.	α Camelp. U. C.		ϵ Aurigae	η Orionis	Capella	β Tauri.
E	E	E	W	W	W.	W.	E.
4 20 39.834	4 28 6.450	4 37 30.477	41 24.207	4 48 6.915	4 56 47.654	5 6 36.166	5 17 40.548
$\gamma_5 - \beta_1$	$\gamma_5 - \beta_1$	$\gamma_5 - \epsilon_1$	$\epsilon_1 - \gamma_5$	$\beta_1 - \gamma_5$	$\beta_1 - \gamma_5$	$\beta_1 - \gamma_5$	$\gamma_5 - \beta_1$
		+ 22.9831	- 22.9831				
		1.36141	1.36141 ^m				
		0.39240	0.39240				
		1.75381	1.75381 ^m				
		+ 56.730	- 56.730				
+ 0.015	+ 0.010	+ 0.010	+ 0.020	+ 0.020	+ 0.020	+ 0.020	- 0.005
4 20 32.295	4 27 58.994	4 40 19.573		4 47 57.227	4 56 39.965	5 6 28.514	5 17 33.037
+ 18° 52' 08"	+ 16° 13' 36"	+ 66° 06' 02"		+ 32° 56' 32"	+ 15° 12' 25"	+ 45° 51' 8"	+ 28° 29' 07"
+ 11 49 28	+ 14 28 0	- 35 24 26		- 2 14 56	+ 15 29 11	- 15 9 32	+ 2 12 27
+ 0.217	+ 0.260	- 1.430		- 0.047	+ 0.277	- 0.375	+ 0.044
+ 1.034	+ 1.008	+ 2.012		+ 1.191	+ 0.999	+ 1.386	+ 1.137
+ 1.057	+ 1.041	+ 2.468		+ 1.192	+ 1.036	+ 1.436	+ 1.138
- 0.019	- 0.018	- 0.044	- 0.044	- 0.021	- 0.018	- 0.025	- 0.020
+ 0.016	+ 0.010	+ 0.020	+ 0.040	+ 0.024	+ 0.020	+ 0.028	- 0.006
4 20 39.834	4 28 6.450	4 40 27.207	4 40 27.479	4 48 6.915	4 56 47.654	5 6 36.166	5 17 40.548
4 20 39.831	4 28 6.442	4 40 27.183	4 40 27.478	4 48 6.918	4 56 47.656	5 6 36.167	5 17 40.522
- 7.536	- 7.448	- 7.810	- 8.102	- 7.691	- 7.691	- 7.655	- 7.485
- 0.053	- 0.052	- 0.146		- 0.060	- 0.052	- 0.072	- 0.057
- 7.589	- 7.500	- 7.956		- 7.631	- 7.639	- 7.583	- 7.542
"	"	"	"	"	"	"	"

Wednesday 26th June.

Further obsis prevented by clouds.

Comparison of Clock and Chronometer.

Clock 1st Five min mark 18^h 50^m

Chronometer last min bk. 18^h 50^m

Thursday 27th June

Sheet N^o 1 Rattle and bk at 14^h 57^m

M' Brutis W 5^h 5^m

Level W at 15^h 25^m

W 69.5 E 74.0

73.5 70.0

L Cor Bor W 5^h 5^m

Level W at 15^h 35^m

W 75.0 E 70.0

69.5 75.5

L Serpentin W 5^h 5^m

{ Urs Min U. W B D E.

Reject this obs as stars was almost invisible through clouds.

Clock and Chronometer comparison Five minute mark of Clock at 16^h 5^m

Sheet N^o 1 Last min bk 17^h 2^m

Thursday 26th June.

Sheet N^o 2 First minute at 17^h 4^m

Comparison of Clock and chronometer.

Five minute of Clock at 17^h 10^m

At 9 o'clock Paris time the telegraph Office reported that they could not establish communication with Obisj which had not answered their calls since 6 P.M. at 11 o'clock the same report was made.

At 11.30 signals were successfully exchanged with Greenwich. The first ~~part~~ part of signals sent by Greenwich were recorded upon chronograph. With the breaks of Kille clock the last part with breaks of Bond Chronometer.

Sheet N^o 2 last min bk at 17^h 9^m

Weather Cloudy N^o Observations There 17^h 5 at 11^h 50 P.M.

Friday 28 June.

Heavy fog at Brest.

Exchange with Paris. Paris sends a set & then says it was not received in his chronograph so he sends another after several minutes of delay.

Brest promptly returns signals set four two minutes & sends word that there will be no exchange at eleven o'clock.

Comparison of ~~clock~~ clock and Chronometer. Five min mark of clock at

Rattle first before $15^h 29^m$ by chronometer.

Connected through to London at $11^h 30^m$ mean time

Received and sent signals as usual.

Comparison of Clock and Chronometer. Five min Mark at $17^h 55^m$

Last min brk. at $17^h 56^m$

Saturday. 29th June

Cloudy at Brest.

Sheet N^o 1 First min at 15^h 15^m

Comparison of clock and chronometer.

Five minute mark of clock and ^{15^h 20^m}~~Chronometer~~.

Exchanged signal with Paris between 15^h 31^m
and 15^h 39^m.

Signals answer out with black ink in
sheet were made without being sent to Paris as
switch was not turned over.

Chronograph stopped at 15^h 45^m

Chronograph stopped again at 17^h 42^m

Signals exchanged with Greenwich.

Clock and chronometer comparison Five min
of clock and at 18^h 0^m Last min on sheet 18.2

Note! at 15^h 45^m; after clock had been compared
with Chronometer. one

Monday 1st July.

Weather clear.

Sheet N^o 1. 1st min tick at 15^h 2^m

Clock and Chronometer comparison - Five minute
break of clock at 15^h 5^m

Connected through to Paris at 15^h 20^m and
exchanged signals from 15^h 21^m to 15^h 26^m
— Fresh Start —

T Herculis W 5^{ts}

Level W at 16^h 20^m

W 76.5. E 70.5

69.0 . 78.0

γ Dracon. W 03 DEFG.

A Dracon M. W 5^{ts}.

γ Camelp L.C W 5^{ts}

Level W at 16^h 48^m

W 70.0 E 71.0

77.0 71.0

d Herculis W

Reversed to L.P. East.

Monday 1st July

Sheet N^o 2

L' Heroultis E 5⁵

level E at 17^h 12^m

W 77.0 E 71.5

70.0 78.5

Comparison of Clock and Chronometer. Five minute
marks of Clock at 17^h 15^m

Connected through to Paris at 17^h 16^m

Weight on fell after signals were received

New start and Five min mark of Clock at 17^h 25^m

Had some difficulty in getting Paris afterward
but sent good signals at 17^h 33^m

Paris say not very well received please repeat
Second set sent at 17^h 35^m

Well received - Good weather we obs.

& Drue (pr) Ut. E. E D L B. (gives bad result in time comp)

level E at 17^h 47^m

W 69.5 E 78.5

77.5 70.5

y Drue. E 53 E D L B

E2 but in Green rattle.

Greenwich wire connected through and began

Monday 1st July.

send during my observation. Kept on with it however as Greenwich, know it would be easy to distinguish the bks.

22 Barnab L. C. E no rattle before E 3 D 279.

level E at 18^h 10^m

W 76.5 E 71.0

L'Lyra E 55

Clock and Chronometer Comparison. Five min bks of Clock at 18^h 40^m

level E at 18^h 43^m { very hurriedly taken use
W 70.5 E 77.5 } level at 18^h 50^m

77.0 71.0

B Lyra E E 26 BA.

level E at 18^h 5^m

W 77.0 E 71.0

69.5 78.0

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Tuesday 2nd July.

Weather Cloudy - Put Thermometer, 17°
Sheet N^o 1. First min at $14^h 41^m$
Clock and chronometer comparison at $14^h 50^m$ $14^h 59^m$
& $15^h 11^m$

Clock put on alone for one minute each time as its
breaks were with those of Chronometer.

Clock & chronometer comparison at 15.25

Wires to Paris were injured so that we could not
obtain communication with Observatory until 9-10 P.M.
Paris time.

Paris began at once to send signals but they
were lost in the calls of Sunday telegraph op
line who broke in. After some little delay
the wire was leaved - Just as Paris began to
send however the weights on chronograph fell to the
floor

Sheet N^o 2 was then put on First min at 15.47
Paris sent signals and immediately afterward said
something had been deranged in Chronograph
so that they had not been recorded In a few

Tues-day 2nd July.

minutes, he ~~said~~ sent another set which were well received. Brest sent set in return and agreed to exchanged again at 11 P.M.

At 16^h 10. attention given to time observation -
Weather variable -

Clock and chronomete comparison. Five min of
Clock at 16^h 15^m

γ Draa 2 ZED + 2 ft. obsn. doubtful
level 2 at 17^h 0^m

W 74.0 2 70.0

Further Observations prevented by clouds.

At 11 P.M. connected through to Paris and exchanged signals

Paris says cloudy here Have but five stars.

Weights shipped again and chronograph stopped
New start 1st min 17^h 51.

Clock and chronometer. In comparison 17.52.

Five min mark of clock at 17.55.

Greenwich sending time signals from 17^h 57^m to 18^h 3^m

Brest sending signals from 18^h 4^m to 18^h 7^m

Last minute broke at 18^h 8^m.

Weather Cloudy at Brest No observations.

Wednesday 3 July.

Sheet No 1 First min 14^h 44^m Therm 17° 0

B Butis Σ 5^h 5

level Σ at. 15^h 2^m

W 73.0. Σ 70. 5

66. 0. 77. 5

y² Uis min U6 Σ 75.

level Σ at. 15^h 22^m

W 67. 0. Σ 78. 0

75. 0. 70. 0

Connected through to Paris at 15. 25 and asked him to wait a few minutes as I wished go absent & Cor Br.

& Cor Br Σ 5^h 5.

level at. 15^h 31^m

W 74. 5 Σ 70. 5

67. 5. 77. 5

Signals exchanged with Paris as usual. He sending first.

{ Uis min UC. Σ 75. No rattle (2 taps on 1st and take 2nd).

Clock and chronometer. Comparison

Wednesday 3rd July

Five min of Clock 15^h 55^m

Level E at 15^h 56^m

W 68.0 E 78.0

75.5 71.0

T Herculis E 5^h.

Level E at 16^h 18^m

W 76.5 E 79.0

Reversed to Lp. West.

y Inias. W 5^h no rattle bef-

Level W at 16^h 30^m

W 68.5 E 78.0

76.0 70.5

1st min Sheet N^o 2 16^h 32^m

Comparison of Clock & Chronometer. Five min mark at 16^h 35^m

y lamb¹. L.C. W 5^h.

2 taps on E take 2nd illum very bad

Level W at 16^h 50^m

W 77.0 E 70.0

68.5 78.0

L' Herculis W 5^h.

Level at 17 13

W 70.0 E 78.0

78.0 70.0

Wednesday 3rd July.

Connected thro. to Paris at 17^h 22 and
exchanged as usual - but Paris out to observe.

β Dra. W. 6 D 2 Y.

level W at 17^h 33^m

W. 77.5 E 70.5

70.0 78.0

w Dra. M. W. 55.

y Dra. W. 55.

level W at 17^h 57^m

W 70.0 E 78.5

78.5 70.0

Connected through to Greenwich at 17^h 58^m

Received and sent signals as usual During
reception of signals from Greenwich 22 Camelp. (H)
L.C. was obsd.

22 Camelp (H). L.C. W. 55.

level W. at 18^h 10^m

W 79.0 E 71.0

70.5 79.5

Clock and chronometer comparison Five min of
Clock at 18^h 15.

Last min on sheet No 2 18^h 20^m Therm 16.5^m

Thursday 4th July.

Weather clear - Therm 19.5

Sheet No 1 First min 15^h 25^m

Clock and chronometer comparison. Five min at 15^h 30^m
and 15^h 35^m

γ Urs min Me. W 7^h A₂ 2 taps take

Level W at 15^h 54^m

W 64.0 E 73.0

73.0 64.0

Connected through to Paris and exchanged.

Paris sends 1 set.

Brest " " "

Paris " " "

Brest " " "

Lines in very bad condition - current variable

γ Dra W 5^h

A Dra Me. W 5^h

Level W at 16^h 34^m

W 74.0 E 65.5

62.5 77.0

γ Herculis W 5^h

Level W at 16^h 53^m

Thursday 4th July.

W 65.0. E 75.0

74.5 65.5

d Herculis W 5^h

Reversed to Lamp. East

(Just gone in reversing) Clock and Chronometer
Comparison. Five minute mark at 17^h 0. and 17.5

L Herculis E 5^h

Level 2 at 17^h 11^m

W 74.0. E 67.0

64.0 77.0

Sheet No 1 Last min at 17^h 11^m

Sheet No 2 First min 17^h 14^m

β Draconis E 5^h

Level 2 at 17^h 31^m

W 64.5 E 76.5

74.0 67.0

Connected through to Paris at 17^h 30^m

Paris says "Wait a minutes"

Paris ~~second~~ sends at 17^h 32. but not a few of
his sigs. to obs.

W Draconis M. E 5^h

Level 2 at 17^h 46^m

Thursday 4th July.

W 73.5 Z 68.5

64.5 77.0

Clock and chronometer comparison. Five min mark
at 17^h 50^m

V. Dracon 2 5⁵

Level E at 15.58

W 74.0 Z 67.5

65.0 77.0

22 Cancrip. (H). L. C. E A3 two taps min ABCDE
Greenwich was connected through during this obsn
and began to send. Brest did not turn over
switch so as to receive his signals ~~from~~ for about
half a minute afterwards. At close of obsn in
22 Cancrip. gave three rattles, Greenwich signals
came immediately after.

Level E at 18^h 10^m

W 73.5 Z 68.0

65.0 76.5

Sent irregular signals to Greenwich for 3 or 4
minutes.

Comparison of Clock and Chronometer. Five min
mark at 18^h 20.

Friday 5th July.

Weather then clear. Ther. at 8.10 P.M. $24^{\circ}.2$
in Obsy. In cellar where Clock and Chronometer.
are placed $16^{\circ}.0$

Level at $14^h 53^m$

W 49.0 E 66.0

61.0 54.0

Sheet No 1 First min $14^h 53^m$

β Bortis 2 55 Reject

Cart passing during Obsn Swit joined very much
D. doubtful

Level E at $15^h 1^m$

W. 49.5 E 67.0

62.0 54.5

Level E at $15^h 18^m$

W 64.0 E 54.0

49.5 68.5

α Bortis E 55

level E at $15^h 22^m$

W. 51.0 E 68.0

64.5 55.0

Friday 5th July.

L Cu Ber E 5^h.

level E at 15^h 35^m

W 64.5 E 55^h 5

57.5 68.5

Connected through to Paris Obsy. at 15^h 36^m and
Received signals but him out just before close of 3 min
to obs following.

γ Urs Min U. E 5^h.

W 54.0 E 68.5

65.5 57.0

Sent two sets to Paris

τ Herculis E 5^h

level E at 16^h 19^m

W. 65.0 E 57.0

55.0 68.5

γ Draconis E. D C B A.

A. Draconis U. E. 5^h

level E at 16^h 33^m

W 54.5 E 70.0

17.0 57.5

Reversed to Sp. West.

Friday 5 July.

g Camelopard L.C. W. 5^h

E₃ 2 taps take mean 62. B.3 each 2 taps take 2nd
last passing during obsin & shaking badly.

level W at 16^h 45^m

68.0. E 57.0

55.5. 69.5

Sheet N^o 1 Last min 16^h 45.

Sheet N^o 2 ~~2~~ First min 16. 48

K Ophiuchi W 5^h.

Clock and chronometer. Comparison, Five min
mark at 17^h 55.

d Hercules W. 5^h

level W. at 17^h 0^m

W. 57.0. E 69.0

69.5 56.5

L' Hercules W. 5^h

level W at 17^h 10^m

W. 58.5. E 68.0

69.0. 58.0

Weight fell and chronograph stopped New Start.
with 1st min at 17^h 18^m

Friday 5th July.

At 17^h 25^m sky covered by thick haze.

Connected through to Paris. Just as he began to
send a break in p. me to obs.
W Drac. Sir I cut him out and after obs.
asked him to

W Drac U.L. W. 5^{ts}

level W. at 17^h 42^m

W. 70.0. E 58.0

58.5. 69.5

Paris sends signals for 2 minutes

Brest sends 3 minutes

Y Drac W 5^{ts}

level W at 17^h 57^m

W 59.5 E 69.0.

70.0 59.0

22 Camelp. (H.) L.C. W. 5^{ts} p.

level Lp. W. at 18^h 10^m

W 70.0 E 59.0

59.0. 70.0

Connected through to Greenwich at 18^h 8^m and
exchanged signals as usual; Clock + chronometer.
Comparison. Five min mark. at 18^h 20^m
Then 22 90.

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Saturday 6th July.

Gott. to Andrews.

M^r Goodfellow will be ready at 1 A M Greenwich time to make preliminary experiments. Please tell M^r Blake and reply.

Preparation were made at Brest for exchange with Greenwich as usual at 11.30. P M. and with St Pierre, at 1 A. M. but up to midnight the London and St Pierre cables were both "to earth," on account of heavy thunder storm and having been told by M^r Andrews that nothing could be done I gave up for the night

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Sunday 7th July.

Telegram received.

St Pierre 6 July 1872.

Goodfellow to Blake.

Was ready tonight but as you were not there shall be ready to morrow night at same hour. -

Service from London Office to Mr Andrews.

Ellis Greenwich, says failure of signals last night shall try again tonight.

Sent.

Andrews to Gott.

Blake says to Goodfellow; Have been up fifteen nights ^{out} of the last sixteen nights and as cant do any thing with Paris or Greenwich, am going to bed. Will be ready to morrow night at one a m. Greenwich time. Earth currents so strong on land wires that no communication could be had with Paris up to ~~night~~ midnight Gal showed deflection of 42° . -

The same difficulty on cable to London.

Weather cloudy.

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Monday 8th July.

Raining at Brest. Fine weather at Paris
Sheet N^o 1 First min bk. at 16^h 9^m

Received one set from Paris

Sent one set to Paris

Battery very weak.

Went to teller and gave rattle just before 16^h 57^m
by Chronometer.

Clock and Chronometer. Comparison Five min
Mark of Clock at 17^h 5^m

Clock and Chronometer. comparison Five min
Mark. at 17^h 35^m

New Start. at 18^h 17^m

Clock and Chronometer. comparison. Five min
mark at 18^h 20^m

Exchanged with Greenwich.

Clock and Chronometer. comparison Five min
mark. at 18^h 35.

Sheet N^o 1 Last minute break. at 18^h 37.

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Tuesday 9. July.

Weather. partially clear. Ther. $18^{\circ}5$. Instrument levelled.
Sheet N^o 1 First min $15^h 25^m$

Clock and Chronometer comparison.

Five min mark at $15^h 30^m$ At $15^h 32^m$ Clock alone
for 1 min

Level W at $15^h 34^m$

W 73.5 E 65.0

65.0 73.5

E Serpentis W. 5^h

Level W at $15^h 48$

W 66.5 E 72.5

75.0 64.0

E cor Bar. W 5^h

W 65.5 E 74.0

75.0 65.0

Exchanged with Paris foggy weather there Cloudy here.
At about $16^h 10^m$ changed in obsy. from
3 Daniells to 6 Menotte elements.

Clock and Chronometer comparison.

Five min mark at $16^h 25^m$

Tuesday 9th July.

Reject v ft thro. clis

Level W at 16^h 34.^m

W. 76.5. E 65.0

67.5. 74.0

γ Herculis W 5^h

γ Camelip ~~E~~ L.C. W. no rattle lfp EDBA

Reject. A3 - quite tremulous

Level W at 16^h 45.^m

W 68.0 E 74.5

77.0 66.0

d. Herculis W Reject all lfp DEY.

v ft thro. clis.

δ¹ Herculis W. 5^h v trem

Level W at 17^h 12.^m

W 77.5. E 65.5

69.0 74.0

Clock and Chronometer comparison, Five min mark
at 17^h 20.^m

Sheet N^o 1 Last min 17^h 20.^m

Sheet N^o 2 First min 17^h 25.^m

β Dracon. W. 5^h

Level W at 17^h 31.^m

W 78.0 E 65.5

70.0 73.5

Tuesday 9th July.

W Drain W. W 7^h 2^h

Reversed to Lp East.

W Drain (for) U.C. E 5^h

Level W at 17^h 48

W 68.5 E 73.5

76.5 67.0

Y Drain E 5^h

Level E at 17^h 36^m

W 77.0 E 67.0

68.0 76.0

Exchanged with Paris as usual. Paris exchanged with London. 1400. units resistance in circuit at Brest.

Cloudy.

Level E at 18. 43

W 68.0 E 77.0

77.0 68.0

Cloudy.

Comparison of Clock and Chronometer. Five min mark at 19^h 25^m

Sheet N^o 2 last min 19^h 25^m

Sheet N^o 3 First min 19^h 37.

Tuesday 9th July.

Comparison of Clock and Chronometer.

Five min mark at 19^h 40^m

Called St Pierre at 12.50 AM. Greenwich time
For experiment St P. sends 5^s changes. (positive and negative) for one or two minutes. Found that at end of each 5^s cable had so nearly discharged itself that the moment of raising key was not marked by any apparent motion of "Spot"

At 20^h 18 to note a set of signals
sent according to Mr. Dean's programme alternate
two second change of positive and negative -
Discharge not sharply enough for
noting. Have no confidence in the times recorded
on Best ~~chronograph~~ chronograph

At 20.23 sent set of similar signals to St Pierre.
Mr. Goodfellow complains of difficulty in distinguishing
beginning of discharge.

At 20.32. Best requests St P. to send a set of signals
consisting of. tap every fifth second for two minutes
(P. N. P. N. etc.) which he does at 20.34
Best makes. Obv every time "spot" darts from.

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Tuesday 9th July.

centre to right or left. very satisfactory

at 20.38. Sent similar set. to St Pierre.

He says signals quite sharp. Easy to note.

At 20.42. He sends another set.

Very well received. At 20.46. Brest sends another
set: well received at St Pierre.

Clear at St Pierre cloudy at Brest.

Wednesday 10th July.

Telegrams.

Andrews to Gott.

Blake says to Goodfellow. sidereal time of mean
of last twenty-five signals received $20^h 43^m 26^s.69$
Last twenty five sent. $20^h 47^m 0^s.65$ Raining
Goodfellow to Blake.

Sidereal time mean of last twenty five
signals sent $17^h 16^m 41^s.02$ last twenty five
received $17^h 20^m 16^s.14$. Clear here.

If you try tonight please send word by eleven
thirty Greenwich.

Brest sent word that we would not try tonight

Thursday 11th July.

Clear.

Sheet N^o 1 First min bk. 16^h 4^m

Clock and Chronometer compared. Both together one minute, then clock alone two minutes.

Five min mark of Clock 16^h 15^m

level E at 16^h 20^m

W 75.5 E 70.5

69.0 76.0

γ Draconis E D.C. B.A. bad (illum)

A. Dracr. W. E no rattle bef. 5^h

level E at 16^h 34^m

W. 75.0 E 70.0

68.5 76.5

Cloudy several *s lost. Lamp.

K Ophiuchi E 5^h

W. 69.5 E 75.0

76.5 68.5

α Herculis E 5^h

ϵ Herculis E 5^h

level E at 17^h 11^m

W. 75.5 E 69.0

69.5 75.0

Thursday 11 July.

Gravit. 9.66. L.C. 2 B.C.D.E.F.G. E₂ two taps
take mean.

β Draconis E 5^h add.

Add. 0^s.0 to D₃

Level E at 17^h 31^m

W. 70.0 E 74.0

76.0 68.5

W Dracon. M. 2 7^h 5

Level E at 17^h 41^m

W 76.5 E 68.5

70.0 74.0

Reversed to Sp. West

γ Dracon (pr.) M. W. B.C.D.E.F.G. last passed.

after C had been observed Inst. exceedingly

Level W at 17^h 50

W 72.0 E 72.5.

γ Dracon. W. B₃ C D E F G.

Level W. at 17^h 57^m

W 77.0 E 67.5

71.5 73.0

Thursday. 11 July.

22. Camelp. (H) L.C. W. 7^h 2 taps
level W. at $18^h 15^m$

W. 72.0 E. 72.0
 77.0 67.0

Clock and chronometer compared. Five min mark
of Clock. at $18^h 10^m$

Sheet N^o 1. Last min $18^h 10^m$

Sheet N^o 2. First min $18^h 13^m$

Signals exchanged with Paris

L'Lyrae W. 5^h * C. diff
level W. at $18^h 35^m$

W 77.0 E 67.0
 72.0 71.0

Greenwich begun to send before I had finished obs'n
of L'Lyrae so part of his sig. are lost.

Signals exchanged with { 1400. units resistance in at
~~Paris to~~ Greenwich { Best to Greenwich below resistance
of land wire on English side

50 Dran U.C. W. 5^h

level W. at $18^h 55^m$

W 72.5 E 71.5
 77.5 66.5

Thursday 11 July.

5 Aquilar W. C D E F G. * P!

level W. at 19^h 9^m

W 77.0. E 67.0.

72.5. 71.5

Sky entirely covered with dense clouds.

Clock and Chronometer compared. Clock on alone
Five min mark 19^h 15^m —

Goodfellow to Blake

Dense fog. Goodnight

Clock and Chronometer comparison Five min mark
at 19.45

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Friday 12th July.

Weather cloudy until 16^h 45^m Ther 18°.0.
Fresh S.W. breeze.

Sheet N° 1 First min 16^h 50^m

level W at 16. 55.

W 77.0. E 67.0.

71.0. 73.0

α Herculis W B C D F rest. lost from clouds.

Clock and chronometer compared Five min of
Clock. at 17^h 5^m

α Herculis W. 5^h

level W. at 17^h 11

W 71.0 E 74.0

77.0 68.0

level W at 17^h 25.

W. 71.5. E 73.0

77.5 67.0

β Dracon W 5^h

level W at 17^h 35^m

W 77.0 E 67.5

70.5

74.0, W Dracon M. W 5^h

Friday 12th July.

Level W at 1

Reversed to Lamp. East.

level E at 17^h 41^m

W 77.0 E 68.5

69.0 76.0

4 Draco. (pr) N.C. E. E.D.C.

Rest lost from clouds.

4 Draco. E 5-5

level E at 18^h 0^m

W. 70.5 E 75.0

77.0 68.5

22 Camelop. (H) L.C. E. 7⁵

level E at 18^h 9^m

W 76.5 E 69.0

70.0 75.5 Cloudy.

L' Lyrae E v. f. Through clouds. rattle and tap
for G 2 (rept.) rest lost

Clock and Chronometer compared. Five min

mark of clock. 18^h 40^m

Friday 12th July.

β Lyrae Σ F E D C B A.

level Σ at 18^h 40^m

W 70.5 Σ 75.5

78.0 68.0

Sheet N^o 1 Last min 18^h 52^m

Sheet N^o 2 First min 18. 57.

γ Aquitue Σ 5^h.

Clock & Chronometer compared. Five minute mark.
at 19^h 5^m

Level Σ at 19^h 9^m

W. 78.5. Σ 68.5

70.5. 76.5

Coaches passing from the Base de L'Ouest.

δ Deneb U.C. Σ 832, rest lost from clouds.

Densely Clouded.

κ Aquitue Σ 5^h

level Σ at 19^h 32^m

W 71.0. Σ . 76.0.

77.0. 70.0

Cloudy again. Raining

Sheet N^o 2 Pen raised at 19^h 44^m

" " " down 20^h 2^m.

Friday 12th July.

Brest calls St. Pierre at 20^h 11^m and at 20. 19.
sends set of signals. Reject them as Brest failed
to follow programme by sending twelve positive signals
in succession followed by thirteen negative ones.

They should have been sent. P. N. P. N. P. N. etc
etc. St. Pierre says "Repeat" "Repeat" and at 20^h 22^m

Brest sends a second set all right

St. Pierre says. Please send another set to begin
with - was not ready. Got no rattle

Brest sends. Third set, which is well received
at St. Pierre.

