

Correspondencia con la Casa GRUBB

Expediente del Espectrógrafo

1908

1909

1920

1927



SIR HOWARD GRUBB, F.R.S.
RATHMINES,
DUBLIN.

Optical and Mechanical Works,

2nd of May 1908

1 enc.

Professor F. Iniguez.

Dear Prof Iniguez,

I am sending you enclosed a tracing from the unfinished design of the Spectroheliograph in order that you may see that we are getting on with the work. I cannot do very much more now until I hear from you on the 2 or 3 points which I wrote about a short time since, more particularly about the deviation of the prism and the maximum and minimum rate of travel which you think it desirable to arrange for. This latter I require in order to lay off the gearing from the clock. I think the design is working out very nicely and that we shall be able to produce a very perfect instrument for you.

I observe that the Obj-Glass is to be 10 inches in aperture, but as far as I remember your mirror is only 8 inches. Will you require a new mirror made for the Heliostat? - I propose to drive the inst^t by 2 screws

worked by a clock. the variation of speed to be obtained by a fractional pulley cap with of being advanced nearer or further from centre of large horizontal disc

*Important
Obj Glass*

TELEPHONE No. 1024.

SIR HOWARD GRUBB, F.R.S.
RATHMINES,
DUBLIN.

Optical and Mechanical Works,

11th of May 1908

Prof. F. Iniguez.

Dear Prof Iniguez,

I am much obliged by your letter and the notes which you sent me which will enable us now to proceed with the drawings.

On the question of the curvature of the ~~book~~^{slit} I may have some more to ask you shortly but this is not pressing.

One or two other matters however I should like to speak about.

Firstly. With regard to the last sentence in your letter which deals with the size of the plate holder. I shall make this any size you desire but I would like to point out that the size which you mention for the breadth, i.e:- 130 m/m is more than can be conveniently used, because

as you know, the distance from centre to centre of the slits is only $4\frac{1}{4}$ inches, or 107 m/m, and if we used plates of 130m/m the frame would have to be at least 150m/m on the outside which would almost touch the edge of the second image. It would not be possible therefore to get the Sun's image on the centre of that plate without the frame covering over a portion of the other slit.

We could use these size plates if you wished to have the image a little out of the centre but it might perhaps be better if you adopted a slightly smaller size.

Secondly. As to the rate of the passing of the slit over the image. I see that the ranges you give are very great, in fact from 10 secs to $\frac{1}{2}$ an hour, or even an hour. It would not be possible to contrive any form of clock in which such a great variation in speed could be made, and evidently it would be necessary to introduce a system of differential gearing.

I would like to ask therefore whether it would be necessary to be able to give all these various exposures from 10 secs to say $\frac{1}{2}$ an hour? Or would it be sufficient if we could give you a range from say 10 secs

to one minute for working on the Chromosphere, and then by an alteration in gearing, another set from 5 minutes to 30 minutes for the prominences? These can be more readily obtained.

I will be away from Dublin for about a week and if you desired to write to me on any pressing matter, a letter would find me quicker at the "Grand Hotel" Charing Cross, London.

By the time I come home I expect to have the new drawings ready and corrected by the information you sent me in your last letter, and I can then send you tracings or blue prints.

Se le contestó el 16 manifestándole que lo de las placas 13×18 es un error: lo que le quise es 9×12 . La exigencia viene de la dificultad de hacer en el mismo día placas de dimensiones en pulgadas inglés. En cuanto a la duración de las exposiciones parece suficiente 10 a 60 segundos para cromosfera y 10 a 30 minutos para protuberancias. Para métodos en terreno experimenta propia.

TELEPHONE No. 1024.

SIR HOWARD GRUBB, F.R.S.
RATHMINES,
DUBLIN.

Optical and Mechanical Works,

23rd of May 1908

1 enc

Prof. F. Iniguez.

Dear Prof Iniguez,

I am in receipt of your kind letter of the 20th inst, enclosing 2 copies of the contract for the supply of the Spectroheliograph, one of which in accordance with your instructions I have signed and herewith return, and the other I retain.

The arrangements for the payments of the two instalments is quite satisfactory, and we are already pressing forward the work.

It would be very pleasing to me and probably satisfactory to yourself if, when this instrument is complete that you should be able to examine it and test it here before it leaves Dublin. I shall do my very best to have the

instrument ready for examination in September when the meetings of the British Association take place.

It would be very interesting if you could make it convenient to come to Dublin at that time as you would no doubt meet a great number of your astronomical friends , and there would be no doubt much of interest to you going on in Dublin just at that time. Dublin is only about 10 hours from London, and quite easily reached.

Very truly yours,
W. H. Glubb

SIR HOWARD GRUBB, F.R.S.
RATHMINES,
DUBLIN.

Optical and Mechanical Works,

25th of May 1908

Professor.F.Iniguez.

Dear Prof Iniguez,

Now that the question of the Spectroheliograph is practically arranged, it has occurred to me to make some enquiries as regards the building in which you propose to house the instrument, because, as you can understand, my arrangements for the balancing levers &c., may be somewhat modified according to the character of the building in which you propose to mount the instrument.

From a former letter of yours I infer that you will have to erect an entirely new building, possibly on the roof of some present building. If you have not made your

arrangements already for this, would you approve of my submitting to you a design for a building such as I would think to be suitable?

I should think that a building somewhat similar to what I erected for the Perth, Western Australia Observatory, for a transit room, would be suitable.

This was constructed of an iron framework which was lined on the inside with papier mache sheets.

The roof had a second covering mounted a few inches above the papier mache sheets. This covering was metallic and a system of ventilation was established by which the air warmed by the Sun ascended in a continuous current between the two coatings of the roof and escaped at the top, thus keeping the inner coating of papier mache comparatively cool. The sides were all covered on the outside with louvred frames so that the Sun could never reach the papier mache inner coating, but here also a continuous current of air was kept ascending between the outer and inner coating.

There would be some advantage if

the framework of the building, at least, were made here, as all the attachments for the various levers &c., could be made and completed here on the spot and erected for trial, and this would save, probably, a large amount of trouble in mounting the instrument at Madrid.

It may be that you have already made arrangements for this ~~building~~ building but I thought it no harm to mention the matter, and if you would like a design I shall be very happy to send you one, but would like to have from you a communication as to the approximate sizes and height of the room which you desire.

*Truly
Yours
W. H. Gabb*

TELEPHONE No. 1024.

SIR HOWARD GRUBB F.R.S.
RATHMINES,
DUBLIN.

Optical and Mechanical Works,

4th January 1909.

Prof. F. Iniguez.

Dear Prof Iniguez,

I have communicated with Prof. Whittaker of the Dunsink Observatory and he writes me that he will be very happy to undertake the examination of the Spectroheliograph.

Very truly yrs
H. Grubb
HG

TELEPHONE No. 1024.

SIR HOWARD GRUBB F.R.S.
RATHMINES,
DUBLIN.

Optical and Mechanical Works,

27th January 1909.

Professor. F. Iniguez.

Dear Prof Iniguez,

With regard to the small Equatorial. I find it difficult to judge from the photographs the sizes of the various parts, but it appears to me the best thing to do would be to make use of your present telescope cradle, Decln axis, and what we call the Cross Head, that is the piece which carries the Decln axis; everything in fact above the ink line which I have drawn on the enclosed photo; and that we should make for you everything new below that line; that is, a new Polar axis mounted in a cast iron frame with a driving circle above of as large a diameter as it is possible to get without coming in the way of your present Decln circle; small circle below, and clockwork such as we put to our

6 inch telescopes. The casting to be made for the fixed latitude of Madrid with screws for final adjustment only, and a cast iron pillar, down the centre of which the clock weights will pass.

We could do this for you for £50, or, if you desire to make the pillar yourself or make it in wood, say £45.

I have been working a good deal on the Spectroheliograph lately but the weather is as yet such as impossible to get any solar spectrum. I have, however, (from a sodium line) been able to get the exact curvature of the lines, which I find have a radius of 48 inches when using a straight slit on one of the collimators.

I am, therefore, now preparing the final jaws of the slits to a radius of 96 inches each which I hope to be correct.

I am sending you inx a few days

a sketch of the mounting of the photographic plate holder.

The instrument is now mounted up sufficiently to test the motion and I am very much pleased with it. It works beautifully smoothly, but you will remember that we have not yet got the necessary information from the Architect as to the building so that we have not been able to design the overhead levers. I have it at present supported on temporary wooden levers.

*Sincerely yours
G. G. G. G.*

TELEPHONE No. 1024.

SIR HOWARD GRUBB F.R.S.
RATHMINES,
DUBLIN.

Optical and Mechanical Works,

22nd March 09

*El 26 enviando los planos
& preguntando por detalles para foto-
grafios de protuberancias*

Prof. F. Iniguez.

Director. Astronomical Observatory.

Madrid.

Dear Prof Iniguez,

I am glad to be able to tell you that Prof Whittaker has been here with me to-day and has examined your Spectroheliograph and he is writing you a Report to-night. I think he seems very well pleased with the working.

If you now kindly let me have the height of the room I think I can finish off the instrument and have it despatched to you without much delay.

The finishing of the curved jaws of the slits is the only troublesome piece of work we have to do now.

In a few days I shall send you a drawing giving particulars of the exact positions for the piers.

*With kind regards
from
H. Grubb*

TELEPHONE No. 1024.

SIR HOWARD GRUBB F.R.S.
RATHMINES,
DUBLIN.

Optical and Mechanical Works,

20th April 09

Prof. F. Iniguez.

Dear Prof Iniguez,

We have the Spectroheliograph now all polished & lacquered and re-assembled, and I am finishing off the jaws of the slits being I expect the last piece of work on it; so we shall soon be putting it into its cases for transmission to you.

Meanwhile, it occurs to me to ask you one question, and that is about the clock weights & balancing weights.

There will be, between all these, something like 400 lbs in cast iron weights and the carriage of these will be heavy, and it seems to me almost a pity to be sending these all the way to Spain and paying carriage on them.

If it would meet your wishes, therefore, I

would be quite willing to leave these out and make an allowance off the Contract price of say £2. 10. 0d.

I have no doubt that you could get these done for you in Madrid and of the shape and dimensions most convenient to yourself and so save the carriage from this to Madrid. If, however, you prefer that I should furnish them I shall of course do so.

Very truly Yours
J. P. Webb
J. P.

TELEPHONE No. 1024.

SIR HOWARD GRUBB F.R.S.
RATHMINES.
DUBLIN.

Optical and Mechanical Works,

18th

May

09

Professor. F. Iniguez.

Dear Prof Iniguez,

Very many thanks for your letter of the 26th April. I shall carry out your instructions as closely as possible and furnish the account in the way that you desire.

We are making the packing cases now for the Spectroheliograph and hope to get it off to you next week.

I am preparing an accurate drawing to help you in the mounting of the instrument on its piers.

Sincerely yours
H. Grubb.

ADVICE OF GOODS.

Offices :
57 RATHMINES ROAD.
Goods Entrance
TO
OBSERVATORY
AND
ASTRONOMICAL WORKS
BY
OBSERVATORY LANE,
RATHMINES.

From
SIR HOWARD GRUBB,
RATHMINES.

Dublin, 7. 6. 09. 19

Sent to Professor F. Iniguez.
Director Astro Observatory
MADRID

MARK	DATE OF DISPATCH	NUMBER AND DESCRIPTION OF PARCELS	HOW SENT	PARTICULARS
	7.6.09	One Case No.1	Per City of Dublin Steam Packet Co	<u>SPECTROHELIOGRAPH.</u> Sliding part complete with two 4 " tubes, O.G.s, prism cradle, screw frame & gearing for adjusting double mirror frame & large prism. Stays, tie bars, friction driving wheel & rate altering spindle. Long handle for lifting in & out of gear the gearing nuts nuts. Slow motion handle of large prism & double mirror frame.
		One Case No.2.	To, The "Serra" & "Tintore" S.S.Company for shipment per "ELVIRA" closing 9th.	Camera main frame with angle bracket attached. Gun metal frame with long driving screw and gearing complete in place. Clock winding handle & shackle. Extra screw & nut for varying speed. 2 frames & levers for driving nuts. Clock steel cord & extra cord for levers. 2 supporting plates for clock for fastening to pier.
		One Case. No.3	Carriage Paid to Liverpool.	Base frame for large prism with long driving screw & gearing. 4 lever supporting brackets with screw & washers. Gun metal angle bracket with camera slide attached and handle for same.
		One Case. No.4		Driving clock complete. 4 holding down screws & 2 capstan bars.
		One Case. No.5		In inside separate case double mirror frame & mirrors. In another inside case 10" O.G & adj screws In a 3rd inside case Large prism.

TELEPHONE No. 1024.

SIR HOWARD GRUBB F.R.S.
RATHMINES,
DUBLIN.

Optical and Mechanical Works,

8th June 09.

1 enc.

Prof. F. Iniguez.

Dear Prof Iniguez,

I have now the pleasure to enclose Advice Note shewing contents of the 5 cases we are sending you per "Serra" & "Tintore" S.S "ELVIRA" which leaves Liverpool to-morrow for Bilbao.

I have consigned the goods to Senor Don.M.Zulaica at Bilbao as usual, and I have instructed the "Serra" & Tintore S.Shipping Co to send ~~me~~ the bill for the freight charges and so on, to me here, so that I may deduct therefrom the amount I allow for the weights, and make out my bill to you in the way you suggested. The Slits were not quite to my satisfaction so I am keeping these back for further examination & trial, but I did not like to delay the remainder of the instrument as boats leave for Bilbao only once in

10 days or a fortnight and I will be able to send on the
slits and camera part with the focussing arrangement by
a later boat.

Enclosed please find Advice note shewing
contents of the cases which have been forwarded.

Yours very truly
pp. H. Gubb
H.

SIR HOWARD GRUBB F.R.S.
RATHMINES,
DUBLIN.

Optical and Mechanical Works,

11th June 09.

Prof. F. Iniguez.

Dear Prof Iniguez,

All the large portions of the Spectroheliograph went off by the "Serra " & "Tintore" steamer this week. I kept back the 2 slits just to give the jaws a final adjusting. This is now done and we are sending them to you by the same route.

You will find among the packages an additional driving screw besides the two actually mounted in the frames.

The object of this additional screw is that you may try the instrument travelling either in the usual way in a direction parallel to itself, or, that you may alter the guide rods so as to produce not a pure parallel motion but a motion round the centre of the obj-glass, but in

doing this it is evident that one end of the instrument must move at a different rate to the other and consequently we are sending you the additional screw to use under those circumstances to replace the one that there is there at present.

We have also applied an inverting prism in front of one of the two slits, but it is mounted so that you can either use it or move it out of the way. I shall be glad to hear from you the result of this and whether you get a better result when using this prism or without it.

We are not sending the weights, as arranged and will make an allowance for them.

I could not from the Architect's drawing decide what would be the best proportions for your counterpoise levers but I have sent the axes, nuts & washers, so that you can easily mount wooden levers on these axes for counterpoising and make these whatever length is suitable to the building and the position of the instrument in the building.

I am very truly
A. G. S. G. G.
24

SIR HOWARD GRUBB F.R.S.
RATHMINES,
DUBLIN.

Optical and Mechanical Works,

21st June 09

2 Encls.

Prof. F. Iniguez.

Dear Prof Iniguez,

Having now despatched all parts connected with your Spectroheliograph, I have the pleasure to enclose statement of account showing balance due on completion of the Contract.

You will note from the enclosed bill of the "Serra" & "Tintore" S.S.Co which I have paid and for which I hold a receipt that the total sum I paid was £6.15.8 but I have only charged you £4. 15. 8d as arranged.

If you desire me to send you the receipted bill I will do so.

Yours truly,

SIR HOWARD GRUBB.

Optical and Mechanical Works.

Offices.
57 RATHMINES ROAD.
Goods Entrance.
TO
OBSERVATORY
AND
ASTRONOMICAL
INSTRUMENT WORKS
BY
OBSERVATORY LANE.
RATHMINES.

RATHMINES.

Dublin 21st of June 1909.

The Director, Astronomical Observatory, Madrid, Spain.

To Sir Howard Grubb, D^r.

Special form of Spectroheliograph as per Contract arranged in May 1908.....	£490	0	0
Freight, primage, and Insurance charges to the Port of Bilbao.....	4	15	8
	<hr/>		
	£494	15	8
By cheque received 1st July 08.....	£245	0	0
	<hr/>		
Balance due on shipment of instrument....	£249	15	8
	<hr/> <hr/>		

Julio-3 - Letra del C. L. n^o 65129/7526 por £ 249-15-8

TELEPHONE No. 1024.

SIR HOWARD GRUBB F.R.S.
RATHMINES,
DUBLIN.

Optical and Mechanical Works,

1st July 09.

Professor. F. Iniguez.

Dear Prof Iniguez,

I am obliged by your letter of the 25th June telling me that you will soon send the last instalment due on the Spectroheliograph.

I am now sending you a tracing shewing the disposition of the piers.

All the portions that are shaded will require to rest upon the piers or concrete.

Where 2 red lines are drawn across a gap will have to be left in the concrete to the depth shown. I think you will find the drawing gives all ~~xxxx~~ dimensions necessary for placing the piers. If there be any other information required please write to me and we shall reply at once.

Howard Grubb

TELEGRAPHIC ADDRESS "GRUBB," NEWCASTLE-ON-TYNE.
TELEPHONE N° 3480 CENTRAL, NEWCASTLE-ON-TYNE.

Sir Howard Grubb, Parsons & Co.,
FORMERLY SIR HOWARD GRUBB & SONS, LTD., OF DUBLIN & ST. ALBANS.

Astronomical Instrument Makers,

Optical Works,

Walker-Gate,

Newcastle-on-Tyne.

24th August, 1927.

PROPRIETORS,
C.A. PARSONS & CO., LTD.

LONDON OFFICE
56, VICTORIA STREET, S.W.1.

YOUR REFERENCE.

OUR REFERENCE. CY/ACS.

F. Cos Esq.,
Astronomical Observatory,
Madrid,
Spain.

Dear Sir,

We are much obliged to you for your letter of August 12th and for sending us copies of the drawings of the Spectroheliograph, and also copy of the Observatory Annual for the year 1912.

We have had the description of the Spectroheliograph translated and it makes most interesting reading.

We are returning herewith copies of the drawings, but unless you wish to have it returned we should like to keep the copy of the Observatory Annual.

Yours faithfully,

For SIR HOWARD GRUBB, PARSONS & CO.

C Young

Dr. H. Grubb

Muy señor mío: Recibir ~~los~~ los
dibujos del espectro heliográfico y ~~me~~ felicito
de que se hayan sido útiles los
datos que le hemos facilitado.

Meiterándole el afecto que
tiene V. en esta casa, se repite
doyo after. y e. s. n.

F. C. S.

TELEGRAPHIC ADDRESS "GRUBB," NEWCASTLE-ON-TYNE.
TELEPHONE N° 3490 CENTRAL, NEWCASTLE-ON-TYNE.

Sir Howard Grubb, Parsons & Co.,

FORMERLY SIR HOWARD GRUBB & SONS, LTD., OF DUBLIN & ST. ALBANS.

Astronomical Instrument Makers,

Optical Works,

*12/ agosto: Remitida cuatro
plano y un Anuncio de Walker-Gate,
1912, con la nota de
costo (490 £).*

Newcastle-on-Tyne.

PROPRIETORS,
C. A. PARSONS & CO., LTD.

LONDON OFFICE
56, VICTORIA STREET, S.W.1.

YOUR REFERENCE.

OUR REFERENCE. CY/ACS.

3rd August, 1927.

The Director,
Astronomical Observatory,
Madrid,
Spain.

Dear Sir,

We have had an enquiry from a South American Observatory for a Spectroheliograph similar to that which we supplied to your Observatory, we think, about the year 1909.

We have the drawings of this instrument, but unfortunately the specification and all particulars relating to it were lost in a fire which we had in Dublin during the war.

We should be very much obliged if you could let us have a copy of this specification and also if possible the price you paid us for this instrument.

Thanking you in anticipation.

Yours faithfully,

For SIR HOWARD GRUBB, PARSONS & CO.

C. Young

Sir John

A. G. Sir H. Gubb. Parsons. C^o

Mr.

Newcastle-on-Tyne.

My Sir, mine

As: He recibido su carta, des 5 etc y en mi
deseo de complacer, remito a Vds. por separado
los diferentes planos que conservamos del es-
peckoheliografo y un ejemplar del Anuario
de este Observatorio, correspondiente al año 1902,
con un trabajo, en ^{el cual} se describe y estudia
el aparato: confio en que hallaran, en este
documento, los datos que necesitan.

Respecto al precio poseemos una factura
de 21 de junio de 1908, en la cual solo consta
este dato: "Special form of Speckoheliograph
as per ^{our} contract arranged in May 1908.

L # 490.

No poseemos ~~de~~ la copia del contrato, a
que se refiere esta partida, ni vive ya el
~~jefe~~ que era entonces jefe de este Observatorio,
~~que~~ ^{ninguna} persona que hubiese podido dar mayores
informaciones. # Levando tomar Vds. los datos
necesarios el ruego la devolución de los
planos, para conservarlos en el Archivo de
este Observatorio. Le ~~ref~~ ofice de Vds. ~~afect~~