

# The rutter of 1611

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## 1 The rutter of 1611

[f. 85v]

The voyage that Licenciado de los Ríos made from  
New Spain to the Philippines

In the name of the Holy Trinity and Jesus María Joseph, we began our voyage from the Port of Acapulco, [on the *capitana*] General Don Fernando de Silva and on the *almirante* Capitán Juan de Balmaseda and we set sail Thursday 24 March in the year 1611 at 10½ o'clock in the morning. The Port of Acapulco is in [latitude] 17°0/0.

We left steering south.

25, 26, 27, 28 to the south-south-east and south-east at other times more or less with light wind. We went on the way south-south-west a quarter point more to the south-west.

On 27 I marked the needle at sunset and it set in 2°40' from the west to the north (the instrument was well set). The amplitude conformed with the tables Your Majesty sent me to make the observations 2°53['] and the difference 13[']. I judged this on the *alguja fixa* [In l. margin: Fixa] there being very little difference the sword caused by the iron to this instrument.<sup>1</sup> 28 we got to 14°. We had calm.

29 We had calm. We went very little to the south-south-west.

30 and 31, with reasonable wind to the south-west, a quarter to the west.

APRIL

On 1, 2, 3 [April] to the east<sup>2</sup> 4<sup>a</sup> we went to the southeast to a latitude of 11°½

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<sup>1</sup>Technically, any variation due to such effects as metal on the ship is called 'magnetic deviation', see also the Glossary.

<sup>2</sup>Ríos writes 4<sup>a</sup> to mean a quarter of a compass point or 11¼°.

I took the variation of the compass in the morning which was the Easter Day. The sun had an amplitude of  $5^{\circ}15'$  and it set in  $3^{\circ}$  of east to the north. It northwested  $2^{\circ}15'$ . The ordinary compass [In r. margin; Norw[ested]  $2^{\circ}15'$ ] compared with that [of Fonseca], and lie there in a line northwested  $2^{\circ}$  with respect to that, so that it northwested with respect to the pole[-star]  $4^{\circ}15'$  minutes.

Today we used the *Punto de Esquadria* [method] and we had gained the meridian of the port of la Navidad 150 leagues from Acapulco because there had always been fair winds with which we had been sailing.<sup>3</sup> Until 4 April we steered on the rhumb of southwest [crossed out] northwest until midday on 5 [April] 25 leagues.

Today I came to mark the compasses, the *Fixa* showed [In r. margin: of Fonseca] at sunrise  $3^{\circ}\frac{1}{2}$  to the north, it had an amplitude of  $6^{\circ}\frac{1}{2}$ . It northwested  $3^{\circ}$  and the ordinary [In r. margin: Nor[thwested]  $3^{\circ}$ ]  $5^{\circ}30'$  because the sun arose by it  $1^{\circ}$  to the north.

On 6 to the west a quarter point to the northwest and to the westnorthwest 25 leagues.

On 7 on the same rhumb of westnorthwest — 16 leagues.

[f. 86v]

On 8 to the westnorthwest [On 9, crossed out] 30 leagues.

On 9 on the same rhumb — 25 leagues. Today, in the morning, I observed the compass. It showed northwesting  $5^{\circ}12'$ . [In l. margin: Nor[thwested].  $5^{\circ}12'$ ] During all these days we were making way west, and west a quarter point to the northwest. Although we had been steering at times more to the westnorthwest because the compasses with which they were steering went half a quarter[-point] with respect to the northeast which is a significant error since that half quarter, with another [In l. margin: note about the compass] half or more which they northwested in those places, it happened that the compass in the binnacle northwested a quarter [point].

On 10 we made our way west a quarter point to the northwest so that for the said cause we made way west — 36 leagues.

On 11 making way west — 30 leagues.

On 12 on the same — 30 leagues.

Today I marked the compass and the sun rose one degree to the north, it had an amplitude in altitude [In l. margin: Nor[wested]  $8^{\circ}23'$  // de Fonseca] of  $11^{\circ}\frac{1}{2}$  nine degrees  $23'$  so that the *aguja fixa* northwested  $8^{\circ}23'$

The ordinary compass varied less than  $3^{\circ}$ . Since for lack of seeing the sun these previous days I do not know the arrival those days always comparing the compass which had varied regularly having been magnetized anew in Acapulco and always being in the same [f. 87r] line in the instrument with the *Fixa* which made no difference

On 13 on the same — 45 leagues.

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<sup>3</sup>The significance here of the use of the *Esquadria* method, which was used to find the latitude from the speed and compass bearing, was that to sail to La Navidad was now a simple matter of setting course due east.

On 14 on the same — 35 leagues.

On 15 on the same — 35 leagues.

On 16 on the same — 35 leagues.

On 17 to the west a quarter point. from the northwest — 25 leagues.

On 18 on the same rhumb we were in high seas =

This day in March I marked the compass with little certainty and we got to a latitude of  $10^{\circ}\frac{1}{2}$ . The day before when it was taken the sun rose by the instrument in  $3^{\circ}$  from the east to the north. It had [In r. margin: Nor[thwested]  $8^{\circ}2'$ ] in amplitude  $11^{\circ}2'$ . Then it northwested  $8^{\circ}2'$ .

On 19 to the westnorthwest we made way in a quarter point from west going — 40 leagues.

On 20. to the same[crossed out]<sup>west</sup> — 40 leagues.

Today I went to mark the compass and the sun rose in  $3^{\circ}$  to the north.<sup>4</sup> It had amplitude  $12^{\circ}43'$  which gave northwesting  $9^{\circ}43'$ . the compass that had varied regularly was with this in one and the [In r. margin: Nor[thwested]  $9^{\circ}43'$ .] same line. The ordinary compass was also on the same line.

On 21 on the same rhumb — 40 leagues.

On 22 on the same — 40 leagues.

On 23 on the same — 30 leagues.

On 24 on the same — 36 leagues.

On 25 on the same — 40 leagues.

Today I marked the compass which so far I had not been able to mark because of the clouds. [f.87v] The sun rose by the instrument in  $10^{\circ}$  from the east to the north in an altitude of  $11^{\circ}$ . It had [In l. margin: Nor[thwested]  $3^{\circ}35'$ .] amplitude  $13^{\circ}35'$ . northwested  $3^{\circ}35$ .

On 26 to the west a quarter point. to the northwest — 36 leagues.

Today the sun set at  $15^{\circ}$  from the west to the north. We went to latitude  $12^{\circ}$ . The sun was in  $6^{\circ}20'$ . ☾[Taurus] with amplitude  $14^{\circ}30'$ . The variation half a degree. [In l. margin: Fixa]

On 27 to the west a quarter point to the northwest. 40 leagues.

On 28 to the west — 30 leagues.

Today the sun set at  $13^{\circ}$  from the west to the north in an altitude of  $12^{\circ}$ . It had amplitude  $14^{\circ}58$ . later [In l. margin: Nor[theasted]  $1^{\circ}58'$ .] it northeasted  $1^{\circ}58'$ , and the ordinary ones  $7^{\circ}$ .

On 29 of April — 30 leagues.

On 30 on the same rhumb — 30 leagues.

Today the sun set at  $12^{\circ}$  to the north. It had amplitude  $15^{\circ}15'$ . Then it northeasted  $3^{\circ}\frac{1}{4}$  [In l. margin: Nor[theasted]. $3^{\circ}\frac{1}{4}$ .]

May

On 1. On the same rhumb — 36 leagues.

The sun rose today in  $19^{\circ}$  from the east to the north. It had [In l. margin: Nor[theasted]  $3^{\circ}26$ .] amplitude  $15^{\circ}34'$ . Then it northeasted  $3^{\circ}26'$ .

On 2 on the same rhumb — 36 leagues.

On 3 on the same rhumb — 45 leagues.

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<sup>4</sup>Ceballos-Escalera Gila 1999 has '30g°s de [∩]', where he has transcribed ∩ as .V..

The sun rose today in  $20^\circ$  to the north. It had [In l. margin: Nor[theasted]  $3^\circ 52'$ .] amplitude  $16^\circ 8'$ . Then it northeasted  $3^\circ 52'$ . [f. 88r]

On 4 on the same rhumb ———— 40 leagues.

On 5 on the same. In latitude  $12^\circ - 35$  leagues.

The sun rose today in scarcely  $22^\circ$  to the north. It had  $16^\circ 44'$  amplitude. Northeasting resulted [In r. margin: Nor[theasted]  $5^\circ \frac{1}{4}$ ] of  $5^\circ \frac{1}{4}$

On 6 to the west ———— 40 leagues.

On 7. The same ———— 40 leagues.

The sun rose today in  $23^\circ \frac{1}{2}$  to the north having amplitude  $17^\circ 16'$ . It resulted in northeasting  $6^\circ 14'$ . The aguja fixa and the ordinary [In r. margin: Nor[theasted]  $6^\circ \frac{1}{4}$ ] the same.

On 8 to the west a quarter point from northwest ———— 25 leagues.

On 9 on the same. We went to  $14^\circ \frac{1}{2}$  ———— 35 leagues.

On 10 on the same ———— 40 leagues.

On 11 on the same, making an altitude of  $13^\circ \frac{1}{2}$  — 40 leagues.

On 12 on the same ———— 25 leagues.

Today the sun set in  $10^\circ$  to the north. It had amplitude barely  $10^\circ$ . It resulted in northeasting.

[In r. margin: Nor[theasted]  $9^\circ$  ]  $9^\circ$

On 13 on the same — 25 leagues. We went to  $14^\circ \frac{1}{4}$ .

On 14 on the same — 25 leagues.

On 15 on the same — 25 leagues. Today the altitude was taken precisely and we got to  $15^\circ \frac{1}{6}$ .

On 16 to the west a quarter point, to the northwest — 30 leagues.

On 17 to the west — ———— 25 leagues.

$12^5$  [f. 88v]

The sun rose today in  $31$  Gr. to the north. It had amplitude  $20^\circ 9'$  in  $16^\circ \frac{1}{2}$  of altitude; by which [In l. margin: Nor[theasted]  $10^\circ 51'$ ] the variation resulted in  $10^\circ 51'$ .

On 18 to the west a quarter point to the northwest ———— 25 leagues. Today we took the latitude in  $16^\circ$ .

On 19 on the same ———— 25 leagues.

Today the sun set in  $10^\circ$  to the north. It had amplitude  $20^\circ 40'$ ; with altitude  $16^\circ$ . Then [In l. margin: Nor[theasted]  $10^\circ 40'$ .] the variation was  $10^\circ 40'$ .

On 20. We went — ———— 30 leagues.

On 21 to the west a quarter point. from the northwest ———— 25 leagues.

The sun set today in  $10^\circ$  to the north. It had [In l. margin: Nor[theasted]  $11^\circ 5'$ .] amplitude  $21^\circ 5'$  in an altitude of  $17^\circ$ . Then the variation was  $11^\circ 5'$ .

On 22 of May ———— 26 leagues.

On 23 we went ———— 25 leagues.

The sun rose today in  $31^\circ$  to the north. It had [[In l. margin: Nor[theasted]  $9^\circ 21'$ .] amplitude  $21^\circ 39'$  in an altitude of  $17^\circ$ . Then the variation [was]  $9^\circ 21'$ . The ordinary ones varied  $11^\circ 20'$ .

<sup>5</sup>This appears to be a later pagination number.

On 24 we went ————— 35 leagues.

On 25 we went ————— 33 leagues.

The sun rose in  $29^\circ$  to the north. It had amplitude  $22^\circ$  in an altitude of  $17^\circ$ . Then it varied [In l. margin: Nor[theasted]  $7^\circ$ ]  $7^\circ$  to the northeast. [f. 89r]

On 26 to the west a quarter point from the southwest – 30 leagues. We went to  $16^\circ\frac{1}{2}$ .

On 27 on the same rhumb.

It rose today in  $28^\circ$  to the north. It had amplitude  $22^\circ 19'$ [']. Therefore it varied  $5^\circ\frac{2}{3}$ . [In r. margin: Nor[theasted]  $5^\circ\frac{2}{3}$ .]

In the afternoon I rectified this observation because there was less rocking and it was easier and it went to  $7^\circ\frac{1}{3}$  variation because the sun set in  $15^\circ$  to [In r. margin:  $7^\circ 20'$ ['].]the north.

On 28 on the same rhumb.

On 29 to the west a quarter point from the northwest — 30 leagues. We saw the Ladrões Islands [Mariana Islands] in the morning. One high [In r. margin: Ladrões Islands.] and rounded. The point above was cut off. It was 6 leagues in length, and from there to the other island which ran with it northnortheast-southsouthwest a distance of 5 leagues much bigger from northwest-southeast 4 leagues away. To the northeast of the point another 12 leagues [In r. margin there is a sketch of two islands, see main text] one somewhat smaller, and further to the northeast another 6 leagues. The point is in  $16^\circ\frac{3}{4}$  because the latitude was taken. Several boats left from the Ladrões set out to us.

Today in the afternoon I marked the compass and the sun set in  $16^\circ\frac{1}{2}$  from the west to the north It had [In r. margin: Nor[theasted]  $6^\circ 4'$ ['].] amplitude  $22^\circ 34'$ [']. The difference was  $6^\circ 4'$ ['] and the compass northeasted by that much. [f. 89v]

On 30 on the same rhumb ————— 25 leagues.

On 31 on the same ————— 30 leagues.

June.

On 1 to the west a quarter point to the southwest ——— 30 leagues.

On 2 on the same ————— 40 leagues.

On 3 on the same ————— 20 leagues.

On 4 on the same ————— 30 leagues.

The sun rose in  $25^\circ$  to the north. It had amplitude [In l. margin: Nor[theasted]  $1^\circ 46'$ ['].]  $23^\circ 14'$ ['] in an altitude of  $14^\circ$ . We estimated the difference was  $1^\circ 46'$  m[inutes] of northeasting.

On 5 to the west yawing a quarter point. — 30 leagues.

On 6 on the same ————— 18 leagues.

On 7 on the same ————— 20. legas.

On 8 on the same ————— 15 leagues.

Today the sun set in  $22^\circ 30'$  to the north. It had amplitude  $23^\circ 33'$ [']. minutes in an altitude of  $13^\circ$ . The difference which is  $1^\circ 3'$ ['] is what the compass northeasted. [In l. margin: Nor[theasted]  $1^\circ 3'$ ]

On 9 on the same ————— 25 leagues.

On 10 on the same ————— 25 leagues. Today we came on Cape Spiritu Santo, to the southwest. This morning the aguja fixa stayed.

— Finis —  
[End of f. 89v]

Table 1: The magnetic variations on the 1611 voyage.

| Date<br>1611 | De los Ríos rutter  |  |                                 | <i>Santa Ana</i> rutter                            |                           |
|--------------|---------------------|--|---------------------------------|--|---------------------------|
|              | Ordinary<br>compass | Aguja fixa                                   | Comment                         | Compass<br>error                                   | Compared<br>with ordinary |
| 24.3         |                     |  | 13'                             | "no muy sensible"                                  |                           |
| 27.3         | 2.G.40'             | 2.G.53                                       | 13' Sword                       |  |                           |
| 3.4          | 2. 15               | 4.G.15                                       |                                 | 2g <sup>o</sup> s 15 m                             |                           |
| 5.4          | 5. G 30             | 6.G. $\frac{1}{2}$                           |                                 | 3g <sup>o</sup> s [should be 3g <sup>o</sup> s 23] | Same                      |
| 9.4          | 5.G.12              |  | Binnacle compass different      | 5g <sup>o</sup> s 12                               |                           |
| 12.4         | 8G.23'              | 11.G. $\frac{1}{2}$                          |                                 |  |                           |
| 13.4         |                     |  | 8g <sup>o</sup> s23             | None   |                           |
| 18.4         | 8.G2'               |  | Not reliable                    | 9g <sup>o</sup> s 2                                |                           |
| 20.4         | 9.G.43              |  | Same                            | 8g <sup>o</sup> s 43                               | No difference             |
| 25.4         | 3.G.35              |  | 3g <sup>o</sup> s 35            |  |                           |
| 26.4         | 6.G.20'             | medio Gr.                                    |                                 | 1g <sup>o</sup> s                                  | Same                      |
| 28.4         | 1.G.58              |  | Ordinary compass 7.G            | 2g <sup>o</sup> s                                  |                           |
| 30.4         | 3G1/4               |  | 3g <sup>o</sup> s 15            |  |                           |
| 1.5          | 3.G.26              |  |                                 |  |                           |
| 3.5          | 3.G.52              |  | Should be 57'                   | 4g <sup>o</sup> s 8                                |                           |
| 5.5          | 5.G1/4              | Really<br>5.G 16'                            | 5g <sup>o</sup> s $\frac{1}{4}$ |  |                           |
| 7.5          | 6.G 14              |  | Correct                         |  |                           |
| 12.5         | 9.G                 |  | 9g <sup>o</sup> s               |  |                           |
| 17.5         | 10.G.51             | 12g <sup>o</sup> s-9'<br>=11g <sup>o</sup> 5 |                                 |  |                           |
| 19.5         | 10.G.40             |  | 10g <sup>o</sup> s 48           |  |                           |
| 21.5         | 11.G.5              |  |                                 |  |                           |
| 23.5         | 11.G.20             | 9.G.21                                       |                                 | 9g <sup>o</sup> s 22                               |                           |
| 25.5         | 7.G                 |  |                                 |  |                           |
| 27.5         | 5.G2/3              |  | Actually 5.G 41'                | 6g <sup>o</sup> s 11                               |                           |
| 29.5         | 6.G.4               |  | 6g <sup>o</sup> s 11            |  |                           |
| 4.6          | 1.G. 46             |  | 2g <sup>o</sup> s14             |  |                           |
| 8.6          | 1.G. 3              |  | 1g <sup>o</sup> s               |  |                           |

## References

- Ceballos-Escalera Gila, A. (1999). Una navegación de Acapulco a Manila en 1611: el cosmógrafo mayor Juan Bautista de Labaña, el inventor Luis de Fonseca Coutinho, y el problema de la desviación de la aguja. *Revista de Historia Naval* 17(65), 7-42.