

Maritime Museum of San Diego

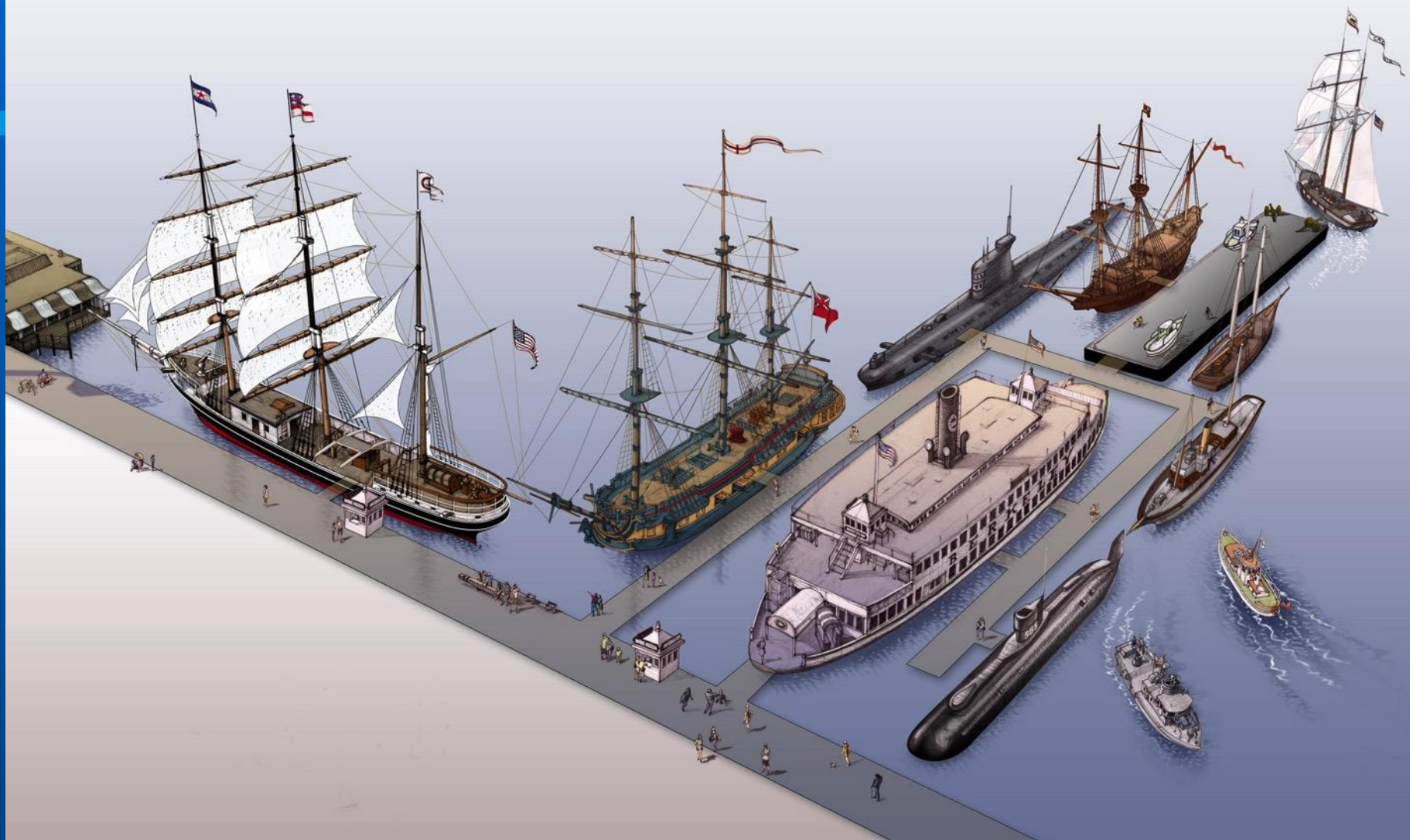


Discovering ...



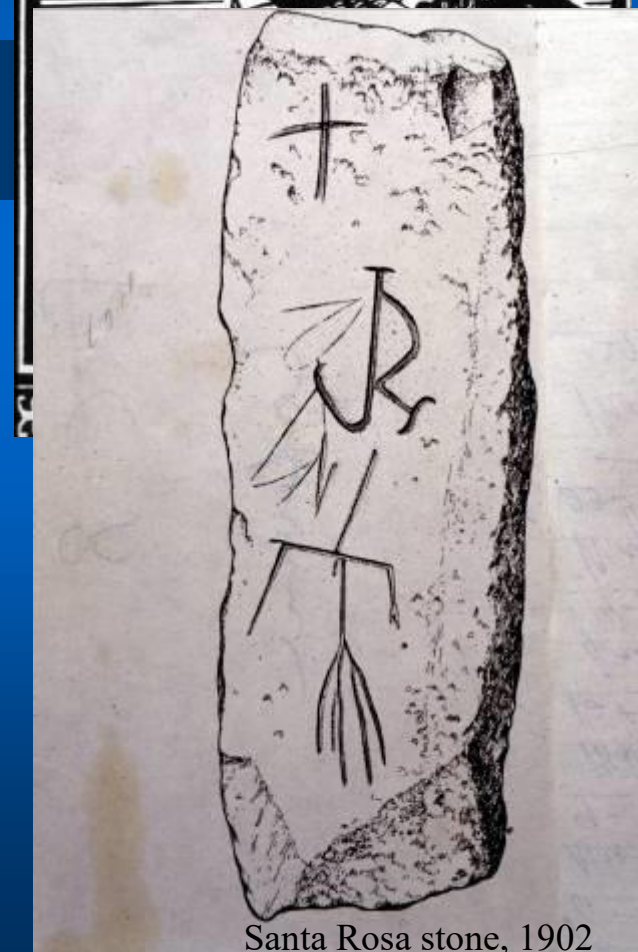
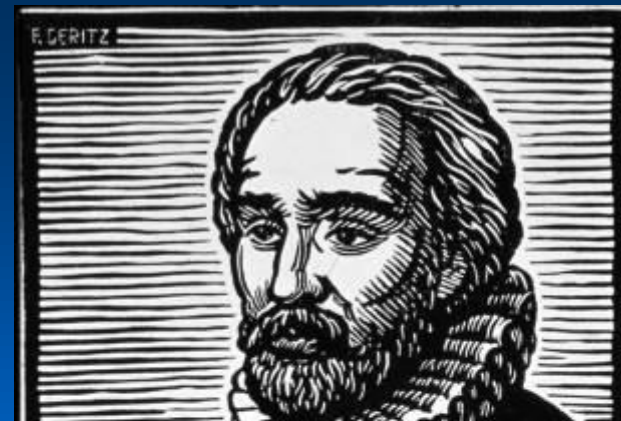
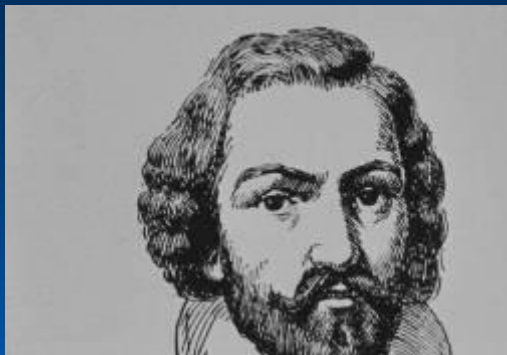


the San Salvador





The world we live in was not inevitable . . .





Cabrillo
STAGE
Professional Musical Theatre



"Kiss Me Kate has rollicking show-stoppers by a hugely talented cast of singers/dancers." – Metro Santa Cruz

Cabrillo Sewing Center

Cabrillo Beach Yacht Club



CABRILLO ECONOMIC DEVELOPMENT CORPORATION



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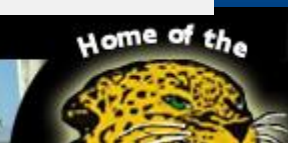


Cabrillo College
est. 1959

JUAN CABRILLO
ELEMENTARY SCHOOL

JUAN RODRIGUEZ CABRILLO HIGH SCHOOL

Juan Rodriguez Cabrillo High School
2001 Santa Fe Ave.



CABRILLO EDUCATION FOUNDATION

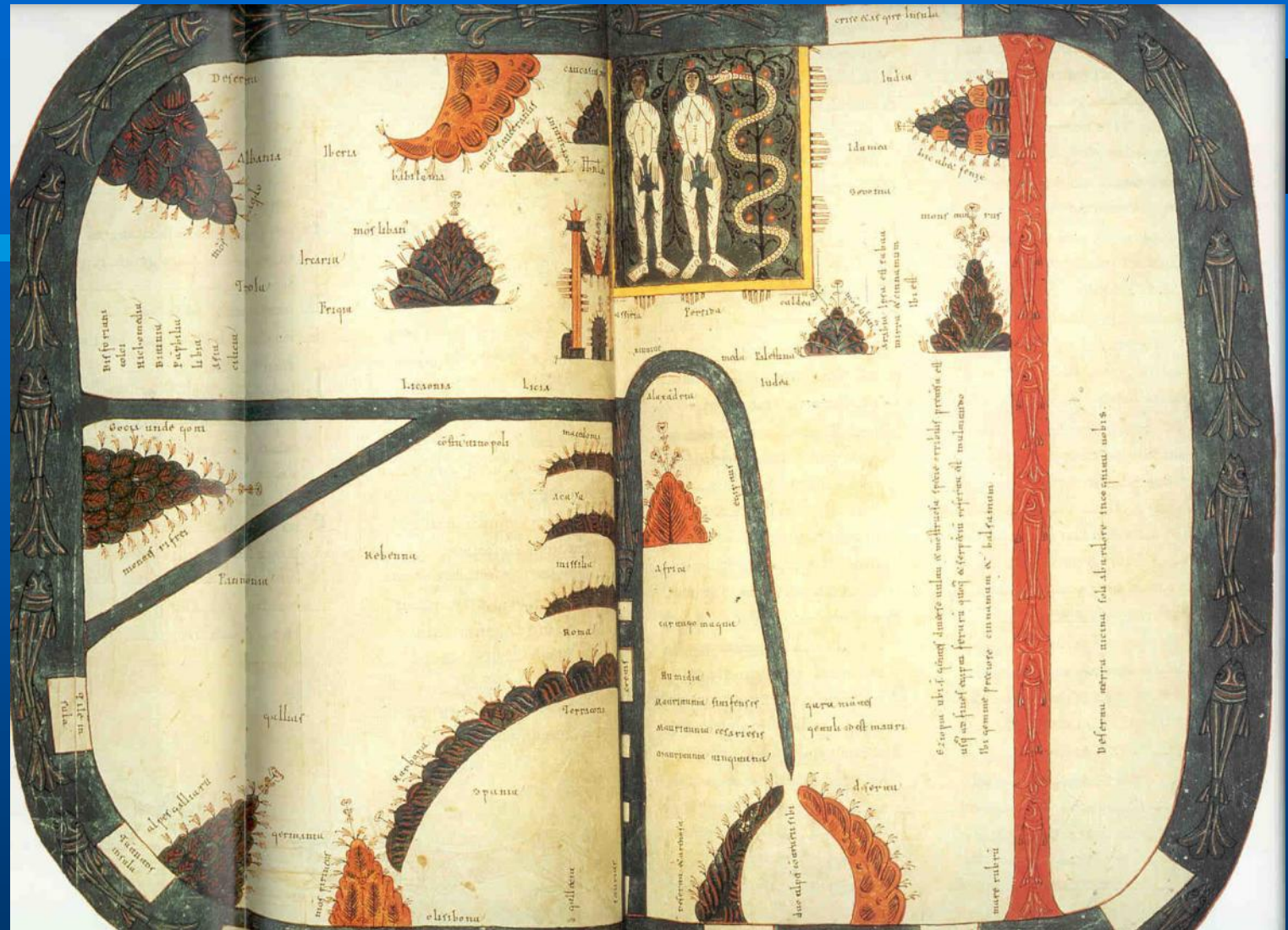
Formerly known as Back to Basics. A nonprofit organization that operates independent of the Cabrillo Unified School District for the benefit of the students attending our local public schools.

Hereford Mapp



Isidorean T-O map

Beatus, 1109





13th century



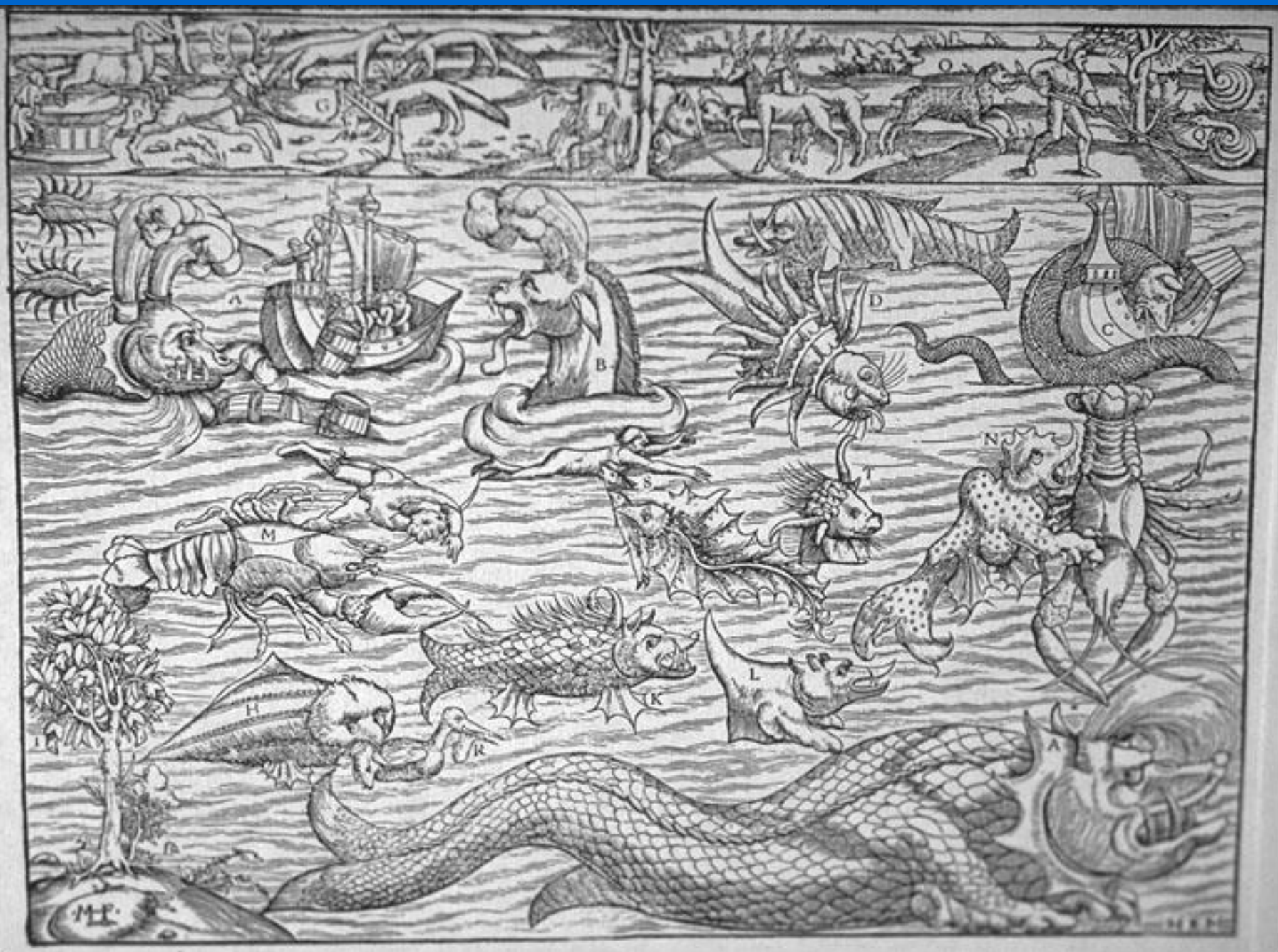
Navagatio Sancti Brendani Abbatis, 565-573

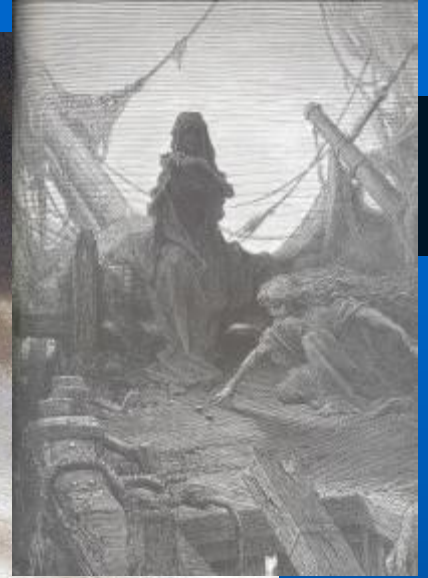
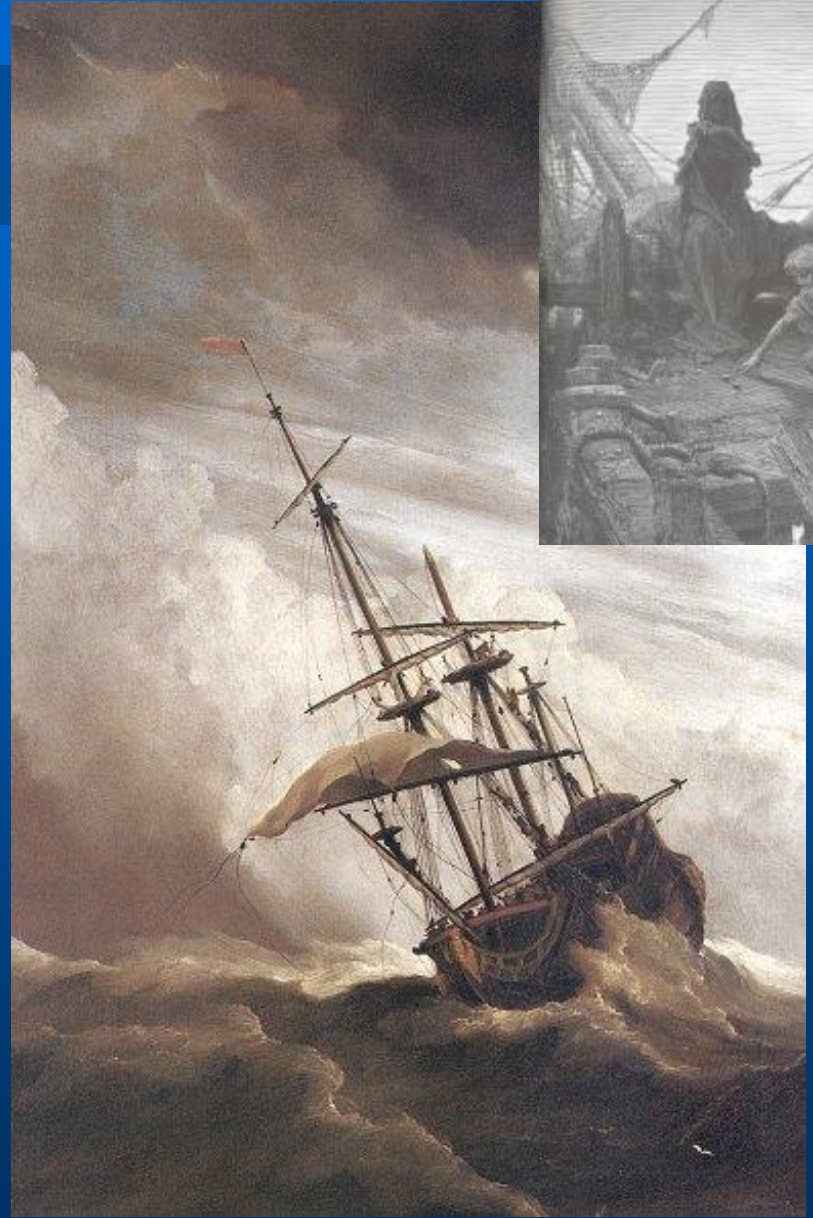
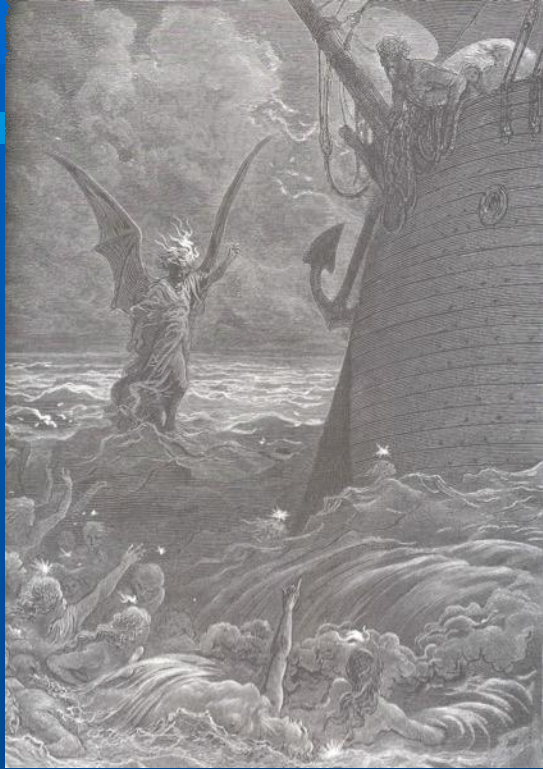


Captain Byron's
Patagonian Giants,
1764

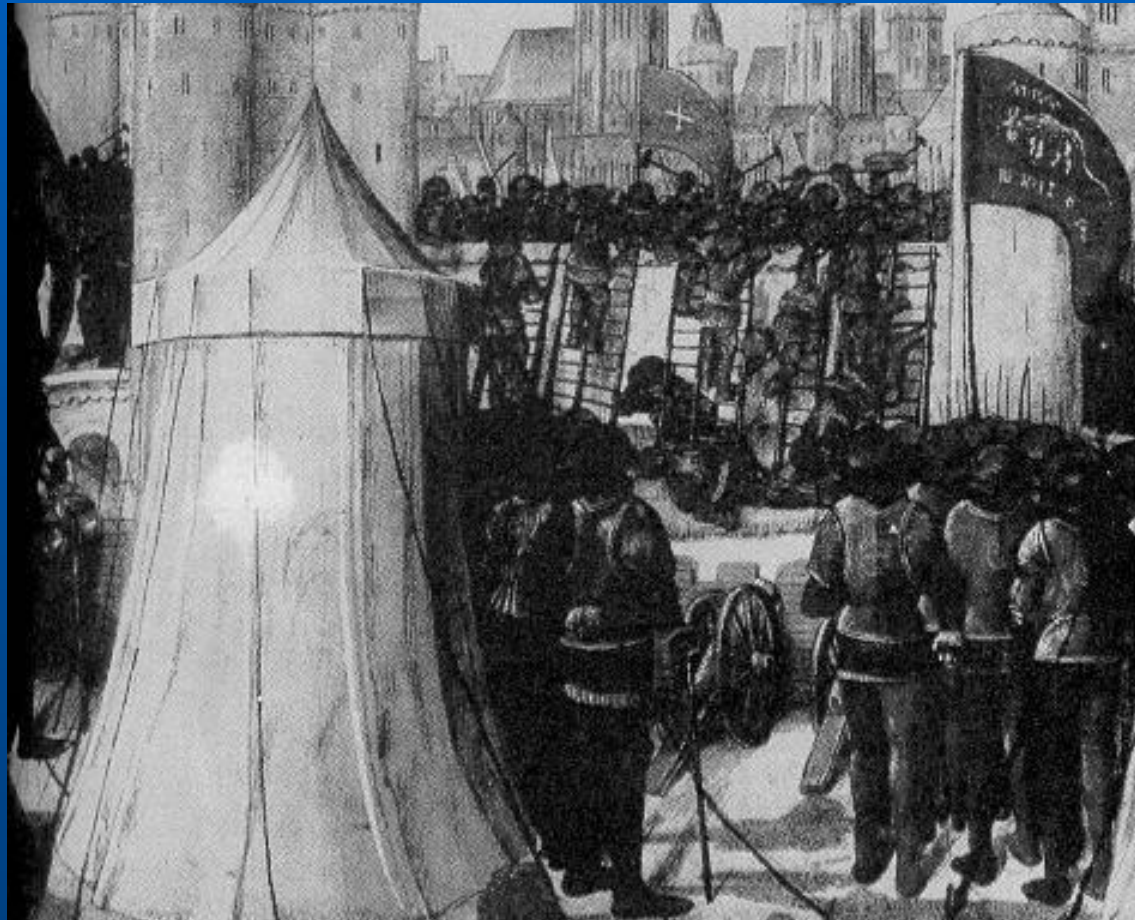


Liber de naturis rerum creatarum
Flemish manuscript, 1492



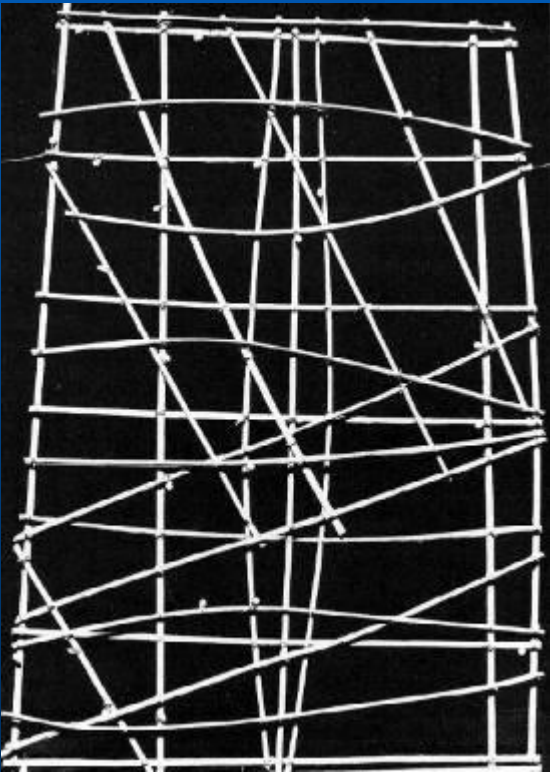
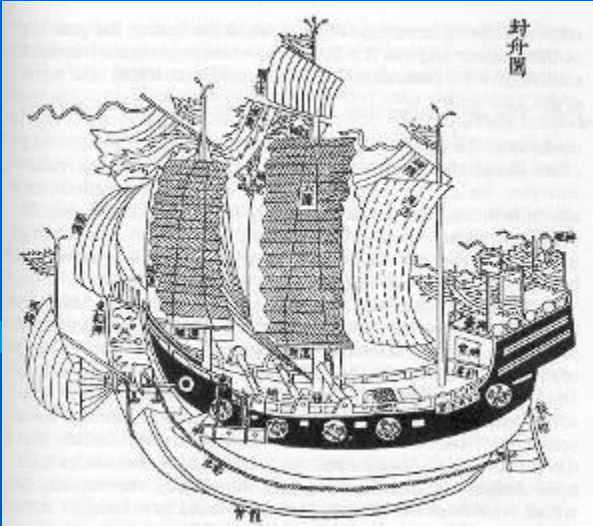


“I cannot persuade myself that there is
anything good in prospect...”



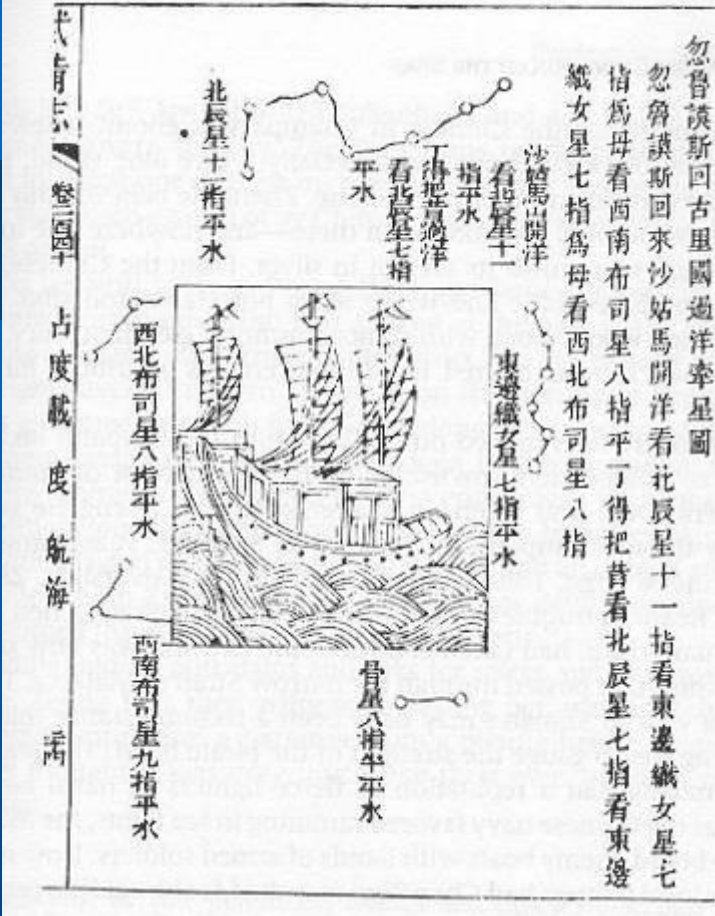
Pius II (1458-1464), 1459

Fuchuan junk

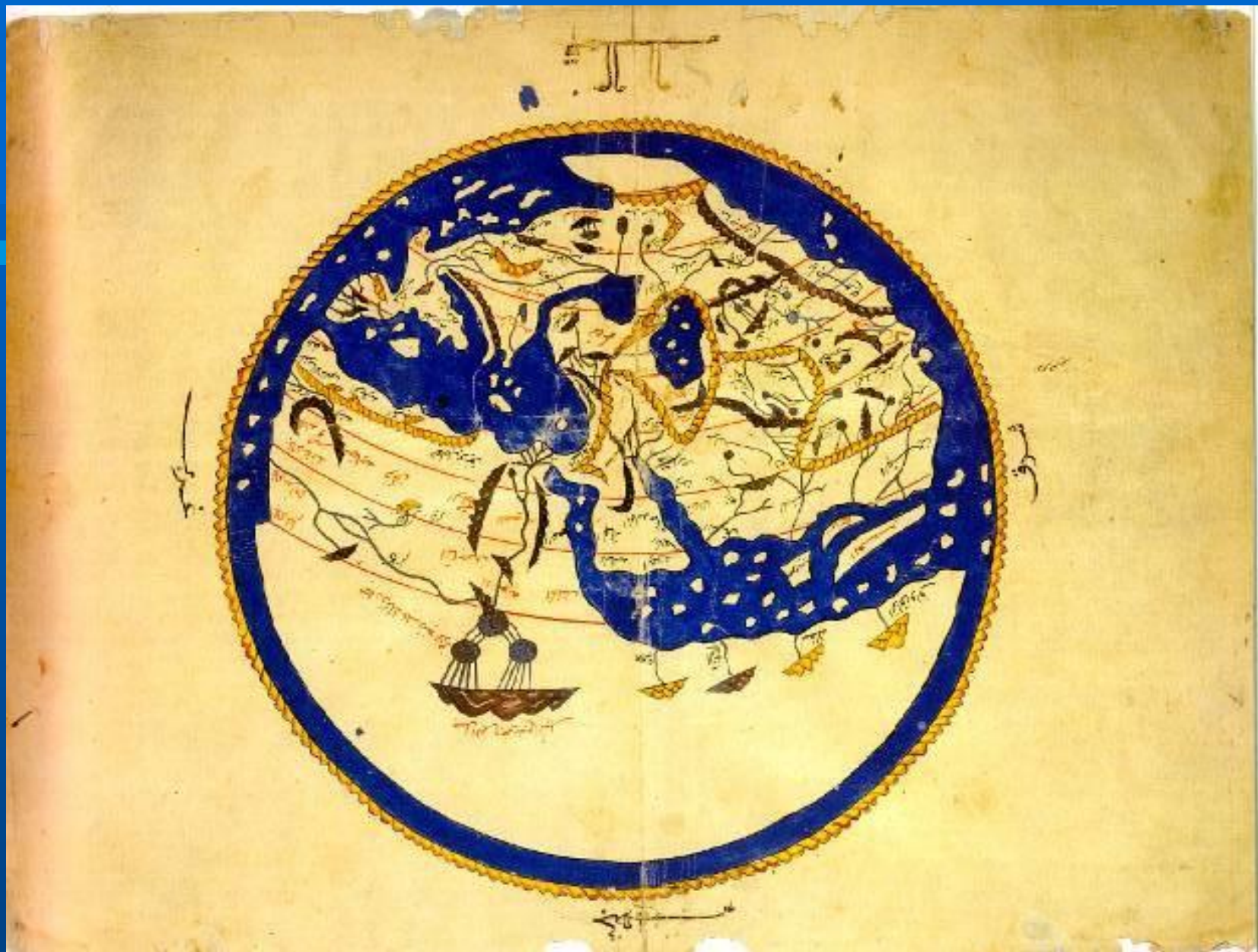


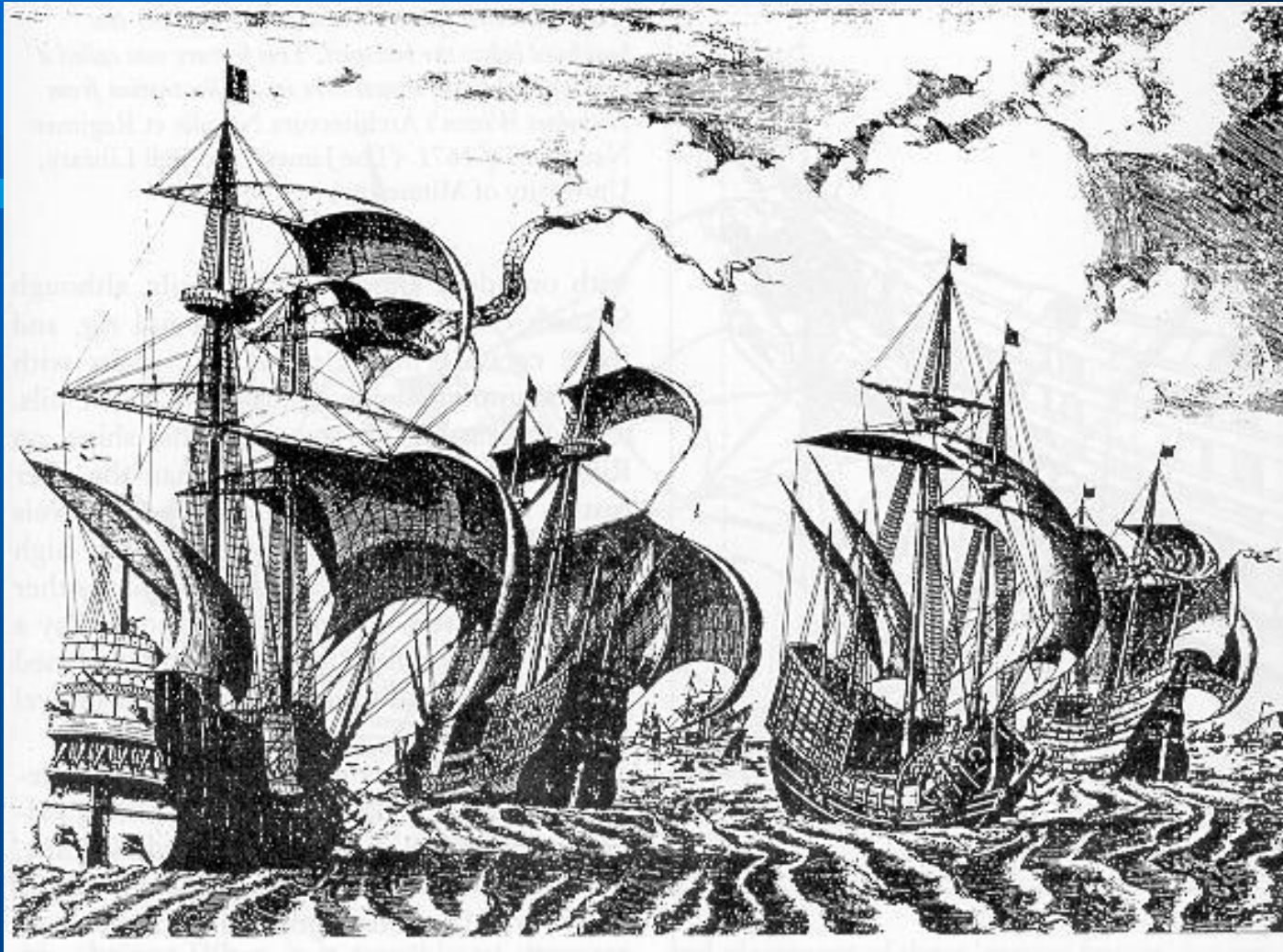
Zheng He declination chart
1405

Micronesian stick chart

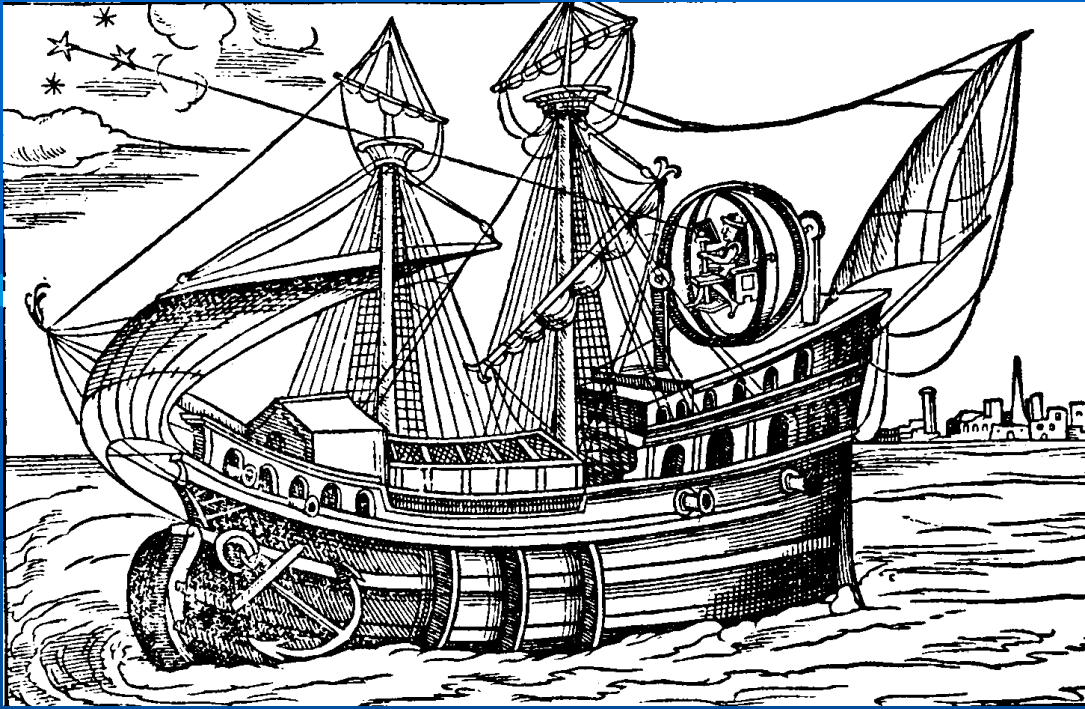


Tahitian war
canoes



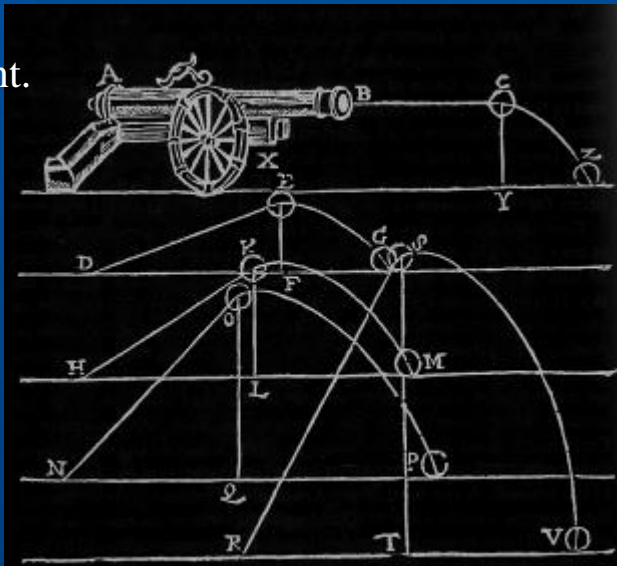


Spanish Carracks, Breughel, 1550's



Cosmolabe 16th cent.

Cespedes, 1606



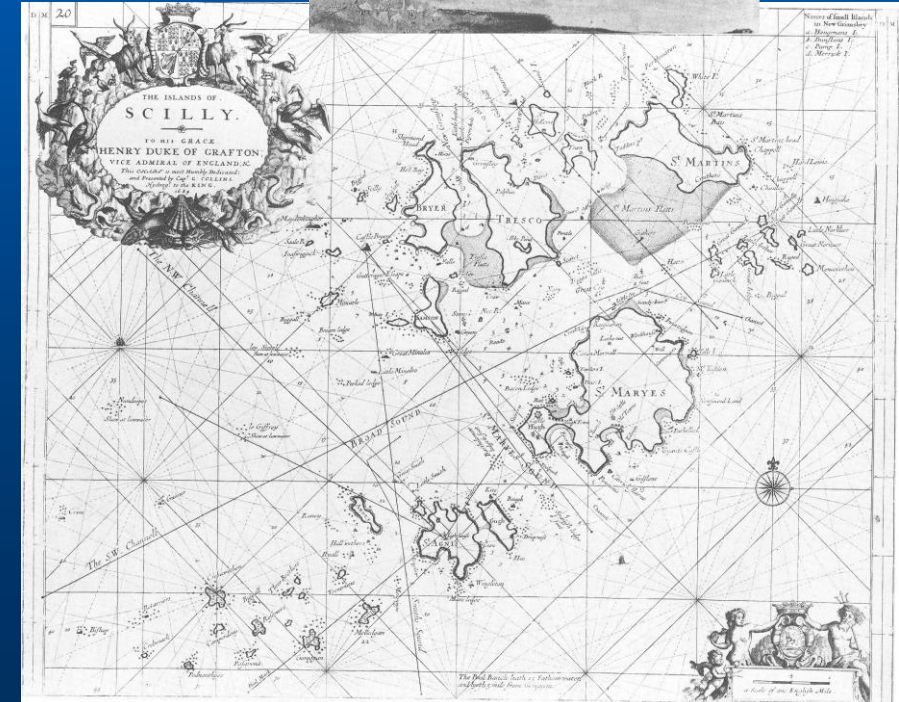
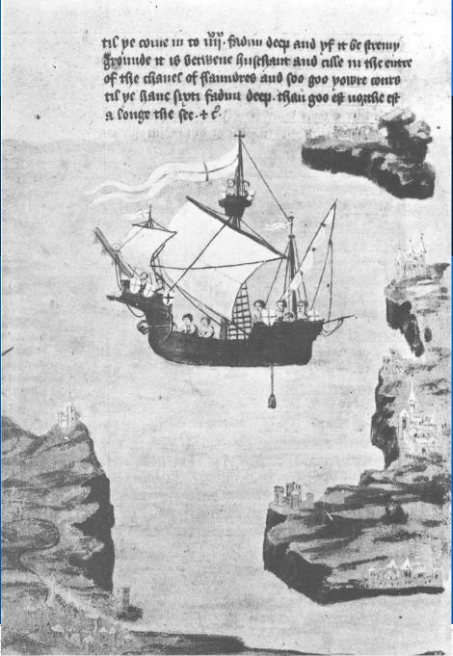
Chienese deamon cannon 1128

Carte Pisani 1270

Chinese compass, 1200



Lasdowne
manuscript
1480



Waghaner 1585



Pierre Garcie, 1520

Grenville Colins, 1689



Lucas Jantz Waghenaraer, 1585



Hood's *Mariner's Guide*, 1592

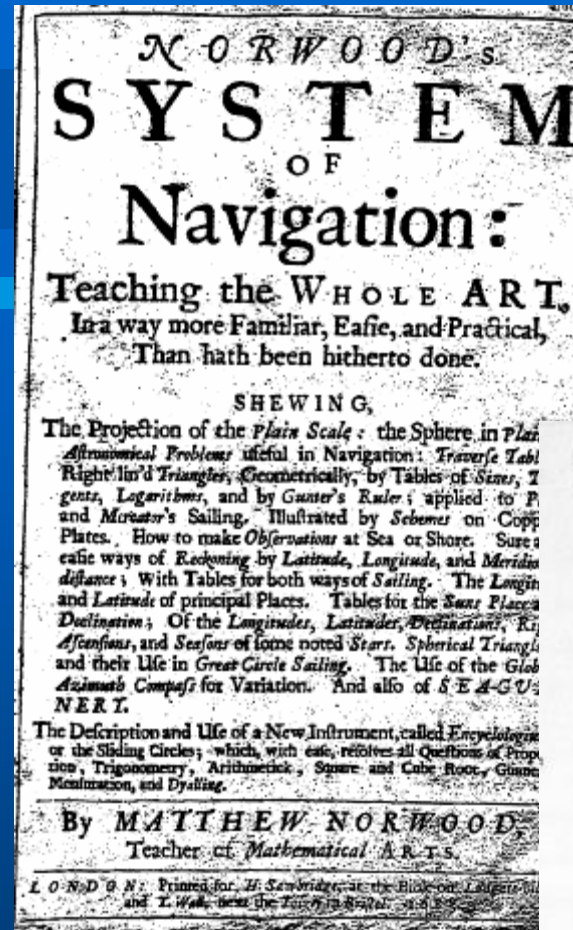
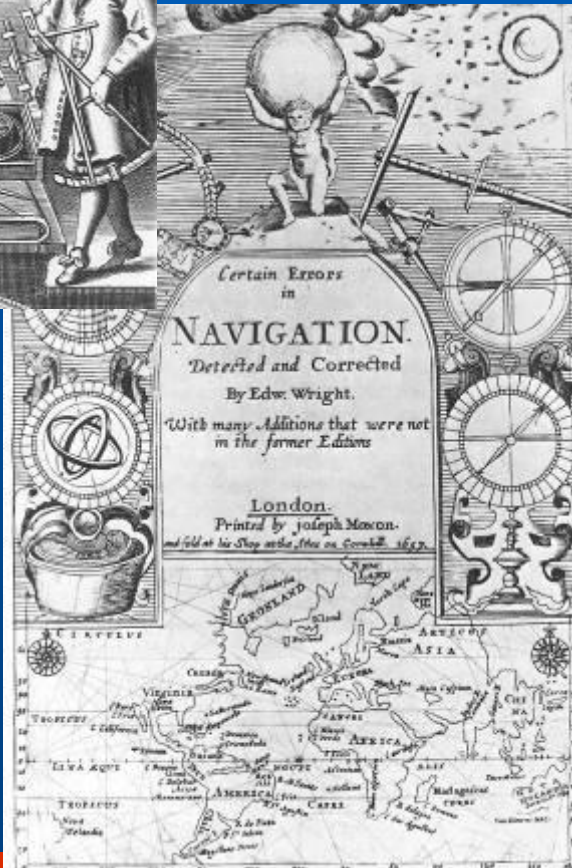
Martin Cortes, Declination tables 1545

| Declinacion del sol. | | | | | | | | | | | | |
|----------------------|-------|--------|---------|-------|-----|-------|---------|--------|----|-------|-------|-------|
| Año | | | | | | | | | | | | |
| Segundo. | | | | | | | | | | | | |
| Abril. | | | | Mayo. | | | | Junio. | | | | |
| dias | 6 | 12 | | dias | 6 | 12 | | dias | 6 | 12 | | |
| 1 | viii. | x | vii. | 1 | x | vii. | xi | 1 | xx | iii | viii. | |
| 2 | viii. | xxviii | | 2 | x | viii. | vii. | 2 | xx | iii. | x | ii. |
| 3 | viii. | i | ix. | 3 | x | viii. | ix. | 3 | xx | iii. | x | vi. |
| 4 | ix. | xx | j. | 4 | x | viii. | xxv. | 4 | xx | viii. | xx. | |
| 5 | ix. | xi | ij. | 5 | x | viii. | i. | 5 | xx | iii. | xx | iii. |
| 6 | x | . | iii. | 6 | x | ix. | iii. | 6 | xx | iii. | xx | vi. |
| 7 | x. | xx | v. | 7 | x | ix. | xviii. | 7 | xx | iii. | xx | viii. |
| 8 | x. | xi | vii. | 8 | x | ix. | xxj. | 8 | xx | iii. | xx | ix. |
| 9 | x | j. | viii. | 9 | x | ix. | xi | 9 | xx | iii. | xx | i. |
| 10 | x | j. | ix | 10 | x. | ix | vii. | 10 | xx | iii. | xx | ii. |
| 11 | x | j. | x | 11 | xx. | x. | | 11 | xx | iii. | xx | iii. |
| 12 | x | ij. | xi. | 12 | xx. | xx | ii. | 12 | xx | iii. | xx | iii. |
| 13 | x | ij. | xxviii. | 13 | xx. | xx | iii. | 13 | xx | iii. | xx | iii. |
| 14 | x | ij. | xi | 14 | xx | xi | iii. | 14 | xx | iii. | xx | ii. |
| 15 | x | iii. | viii. | 15 | xx. | i | vi. | 15 | xx | iii. | xx | i. |
| 16 | x | iii. | xxvii. | 16 | xx | i. | vii. | 16 | xx | iii. | xx | ix. |
| 17 | x | iii. | xi | 17 | xx | i. | xviii. | 17 | xx | iii. | xx | vii. |
| 18 | x | iii. | vii. | 18 | xx | i. | xxviii. | 18 | xx | iii. | xx | v. |
| 19 | x | iii. | xxv. | 19 | xx | i. | xxvii. | 19 | xx | iii. | xx | iii. |
| 20 | x | iii. | xi | 20 | xx | i. | xi | 20 | xx | iii. | x | ix. |
| 21 | x | v. | j. | 21 | xx | ii. | v. | 21 | xx | iii. | x | vii. |
| 22 | x | v. | xi. | 22 | xx | ii. | iii. | 22 | xx | iii. | x | ii. |
| 23 | x | v. | xxviii. | 23 | xx | ii. | ii. | 23 | xx | iii. | viii. | |
| 24 | x | v. | i | 24 | xx | ii. | xx. | 24 | xx | iii. | iii. | |
| 25 | x | vii. | ix. | 25 | xx | ii. | xxvii. | 25 | xx | iii. | i | viii. |
| 26 | x | vii. | xx | 26 | xx | ii. | xxviii. | 26 | xx | iii. | i | iii. |
| 27 | x | vii. | xi | 27 | xx | ii. | xi | 27 | xx | iii. | xi | vii. |
| 28 | x | vii. | iii. | 28 | xx | ii. | xi | 28 | xx | iii. | xi. | |
| 29 | x | vii. | x | 29 | xx | iii. | ii | 29 | xx | iii. | xx | iii. |
| 30 | x | vii. | xxviii. | 30 | xx | iii. | iii | 30 | xx | iii. | xx | vii. |
| | | | | 31 | xx | iii | iii | | | | | |



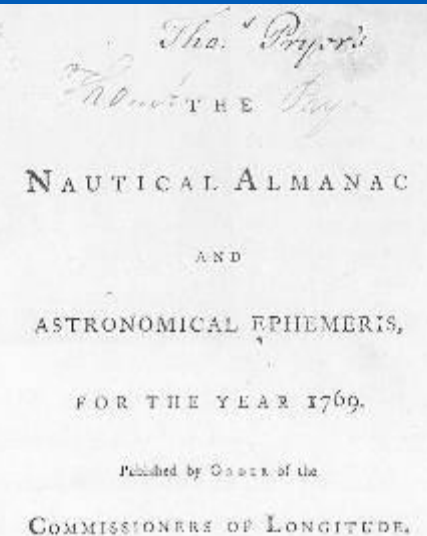
Thomas Digges,
1576

Edward
Wright, 1610



Mathew Norwood,
1685

Nevile Masklyne,
1769



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408 PHILOSOPHIÆ NATURALIS
DE MUNDI SYSTEMATE

PROPOSITIO XXXI. PROBLEMA XII.

Invenire motum horarium Nodorum Lune in Orbe Elliptico.

Designet $Qpmaq$ Ellipsin, axe majore Qq , minore ab descriptam, QAg Circulum circumscriptum, T Terram in utriusque centro communi, S Solem, p Lunam in Ellipsi motam, & pm arcum quem data temporis particula quam minima describit, N & n Nodos linea Nn junctos, pK & mk perpendiculara in axem Qq demissa & hinc inde producta, donec occurrant Circulo in P & M ,

& lineæ Nodorum in D & d . Et si Luna, radio ad Terram ducto, aream describat temporì proportionalem, erit motus Nodi in Ellipsi ut area $pDdm$.

Nam si PF tangat Circulum in P , & producta occurrat TN in F , & pf tangat Ellipsin in p & producta occurrat eidem TN in

SECONDE PARTIE, LIVRE VII. 181

CHAPITRE PREMIER.

Intégration des équations différentielles du mouvement lunaire.

1. REPRENONS les équations différentielles (K) du n°. 15 du second livre, et donnons-leur la forme suivante,

$$dt = \frac{dv}{hu^2 \cdot \sqrt{1 + \frac{2}{h^2} \cdot \int \left(\frac{dQ}{dv} \right) \cdot \frac{dv}{u^2}}}$$

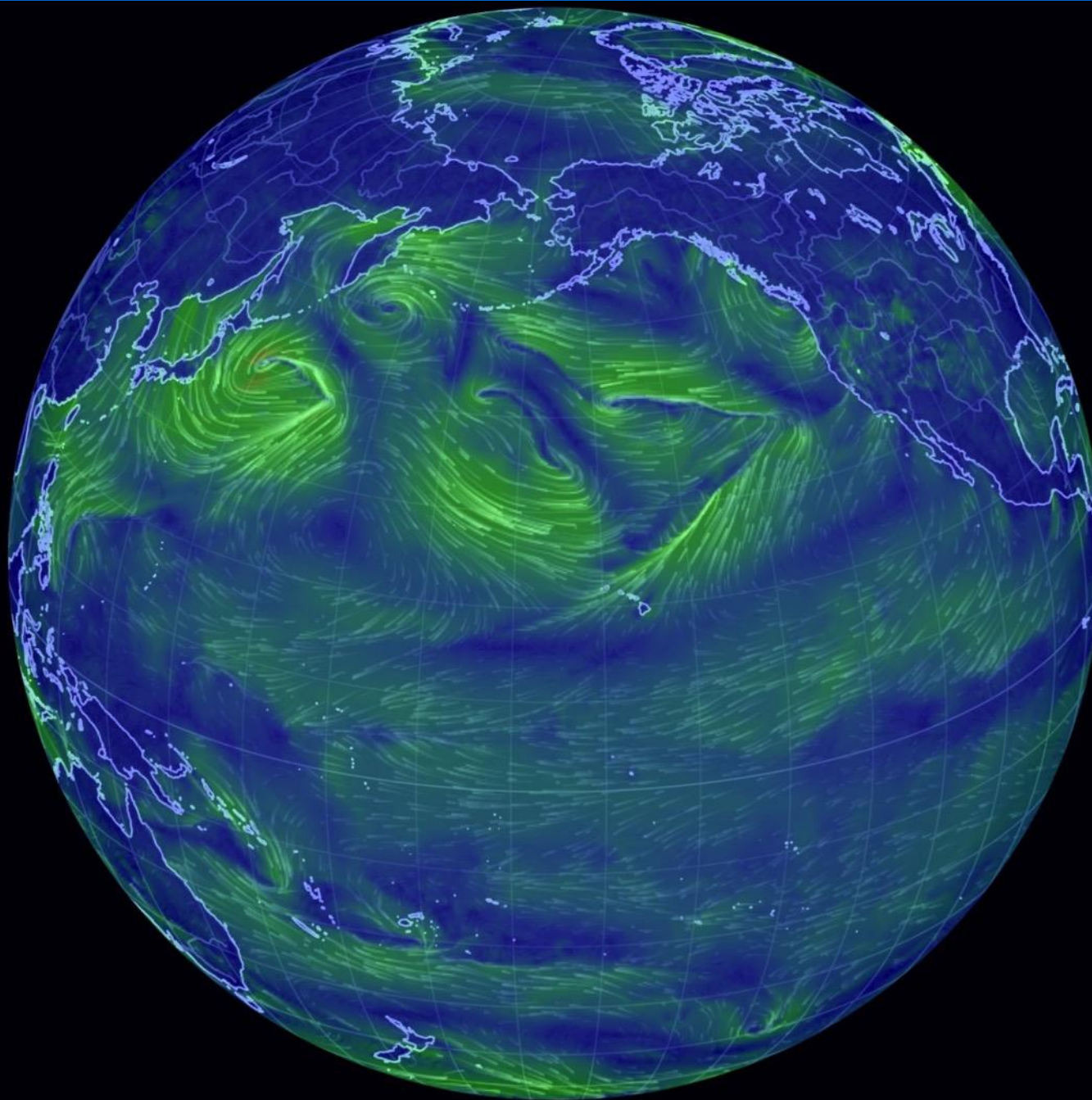
$$0 = \left(\frac{ddu}{dv^2} + u \right) \cdot \left\{ 1 + \frac{2}{h^2} \cdot \int \left(\frac{dQ}{dv} \right) \cdot \frac{dv}{u^2} \right\} + \frac{du}{h^2 u^2} \cdot \frac{dQ}{dv} - \frac{1}{h^2} \cdot \left(\frac{dQ}{du} \right) - \frac{s}{h^2 u} \cdot \left(\frac{dQ}{ds} \right) \quad ; (L)$$

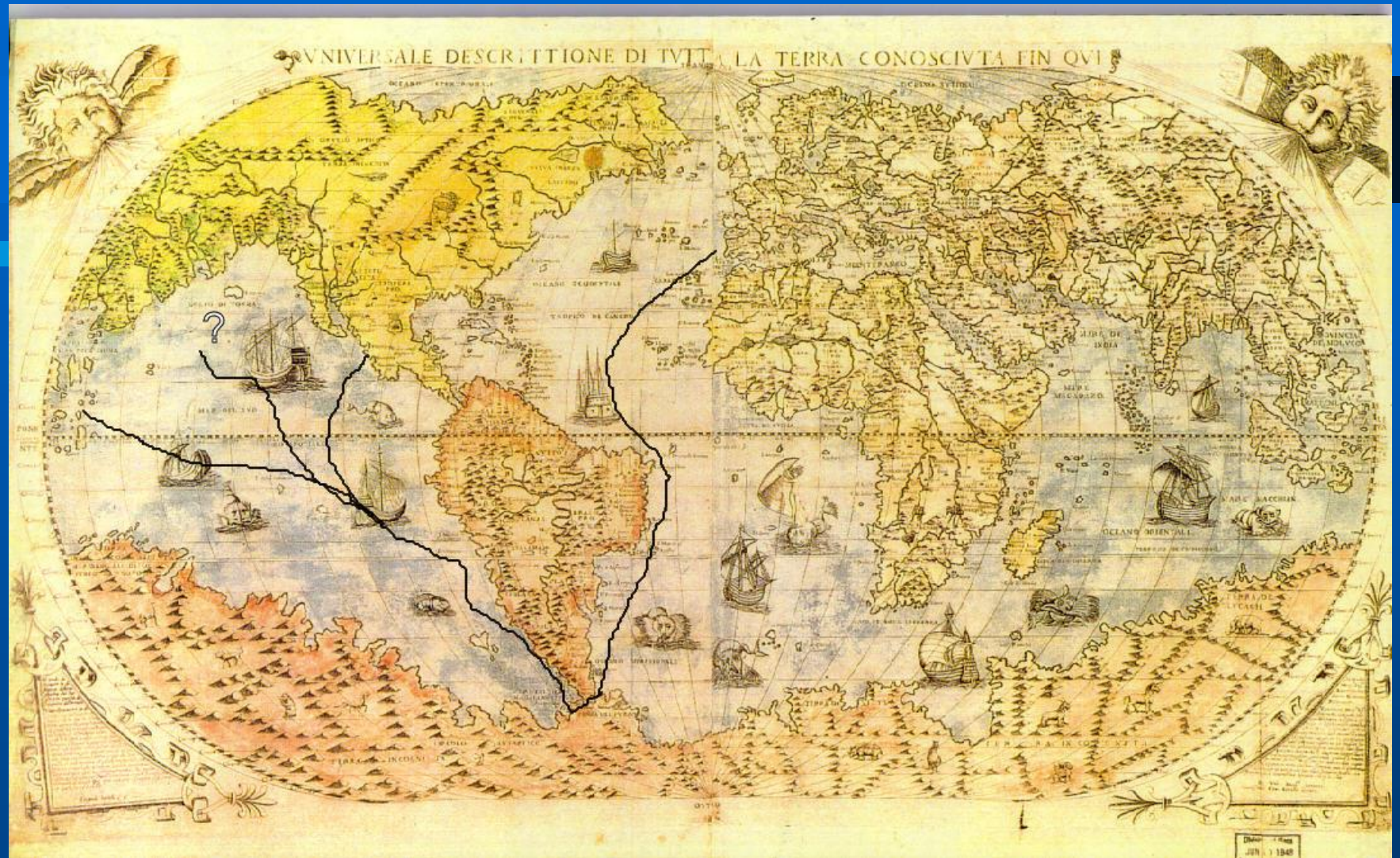
$$0 = \left(\frac{dds}{dv^2} + s \right) \cdot \left\{ 1 + \frac{2}{h^2} \cdot \int \left(\frac{dQ}{dv} \right) \cdot \frac{dv}{u^2} \right\} + \frac{1}{h^2 u^2} \cdot \frac{ds}{dv} \cdot \left(\frac{dQ}{dv} \right) - \frac{s}{h^2 u} \cdot \left(\frac{dQ}{du} \right) - \frac{(1+ss)}{h^2 u^2} \cdot \left(\frac{dQ}{ds} \right)$$

Dans ces équations, t exprime le temps, et l'on a

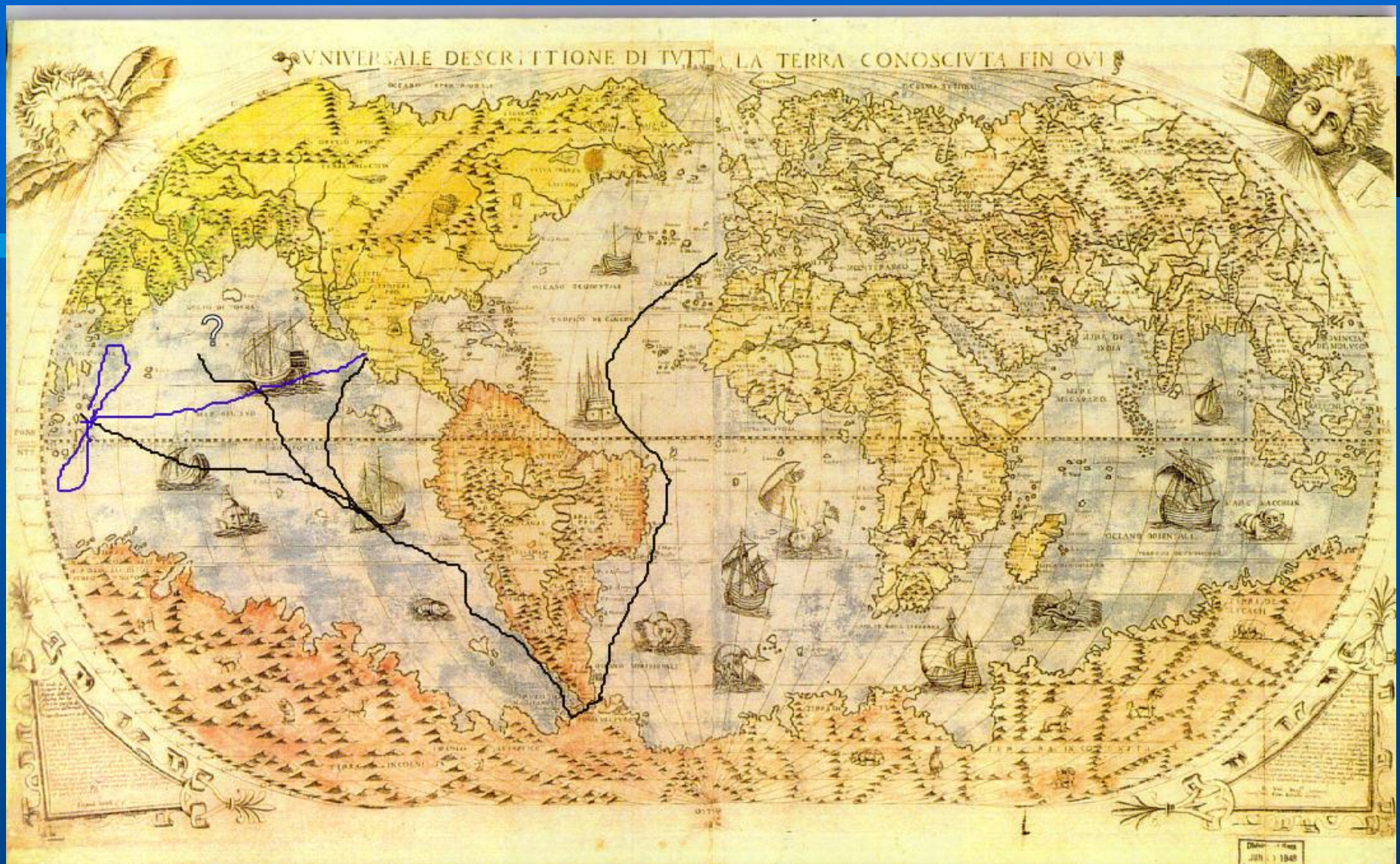
$$Q = \frac{1}{r} - \frac{m' \cdot (xx' + yy' + zz')}{r'^3} + \frac{m'}{\sqrt{(x'-x)^2 + (y'-y)^2 + (z'-z)^2}}$$

M , m et m' sont les masses de la terre, de la lune et du soleil; x, y, z sont les coordonnées de la lune rapportées au centre de gravité de la terre, et à une écliptique fixe; x', y', z' sont les coordonnées du soleil; r et r' sont les rayons vecteurs de la lune et du soleil; s est la tangente de la latitude de la lune au-dessus du plan fixe; $\frac{1}{u}$ est la projection de son rayon vecteur sur le même plan; v est l'angle fait par cette projection, et par l'axe des x ; enfin h^2 est une constante arbitraire dépendante principalement de la distance de la lune à la terre.



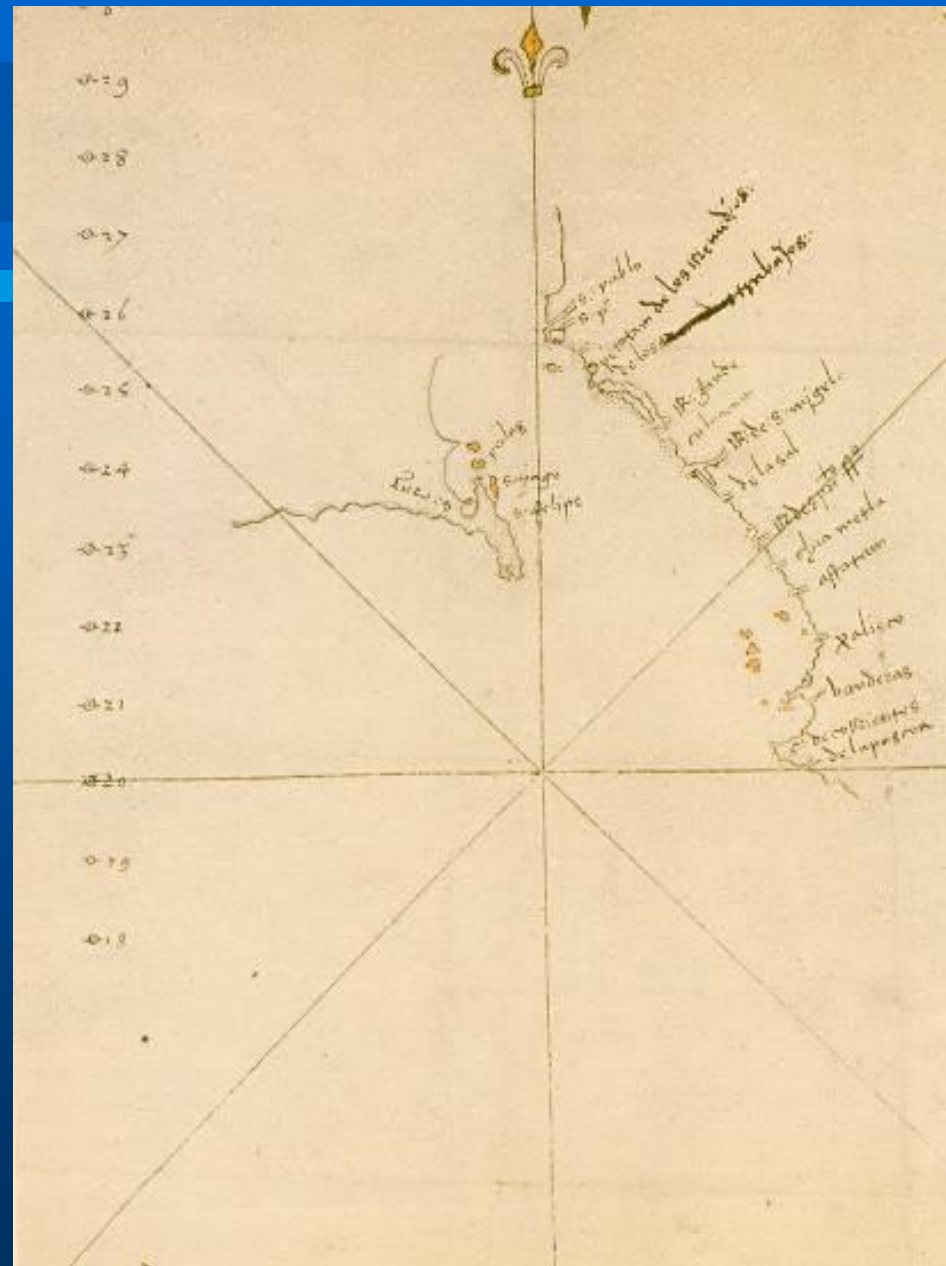


Loaisa 1524-1527

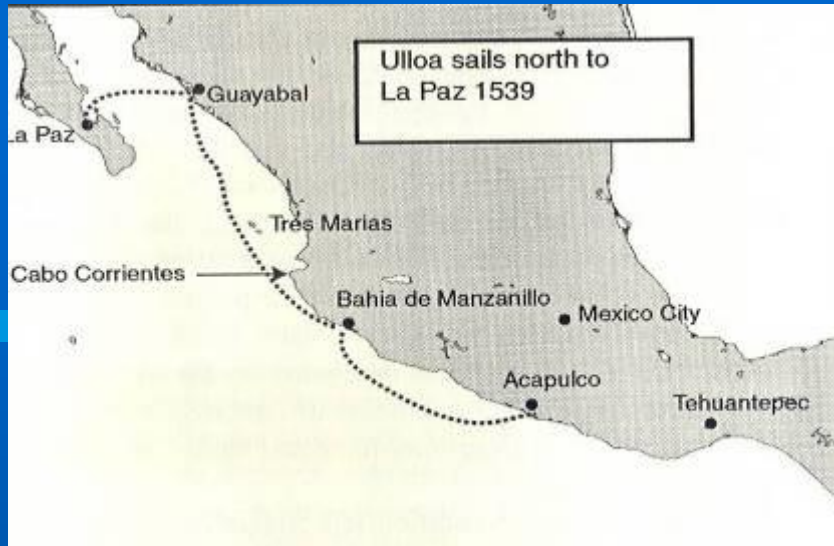


Saavedra 1527-1529

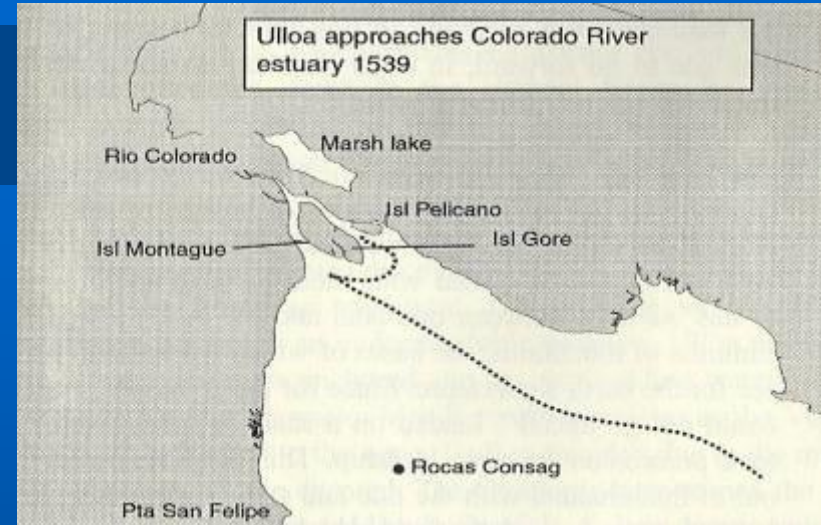
Baja & La Paz,
Cortez, 1535



Francisco de Ulloa



July 8-August 31, 1539



September 10-September 28, 1539



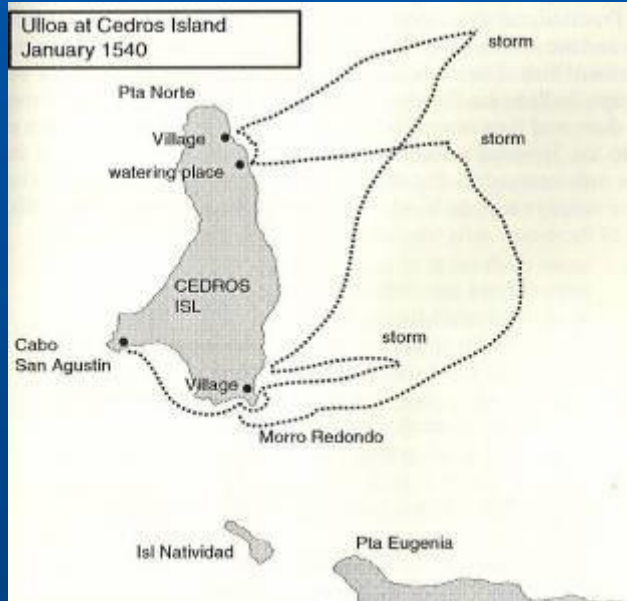
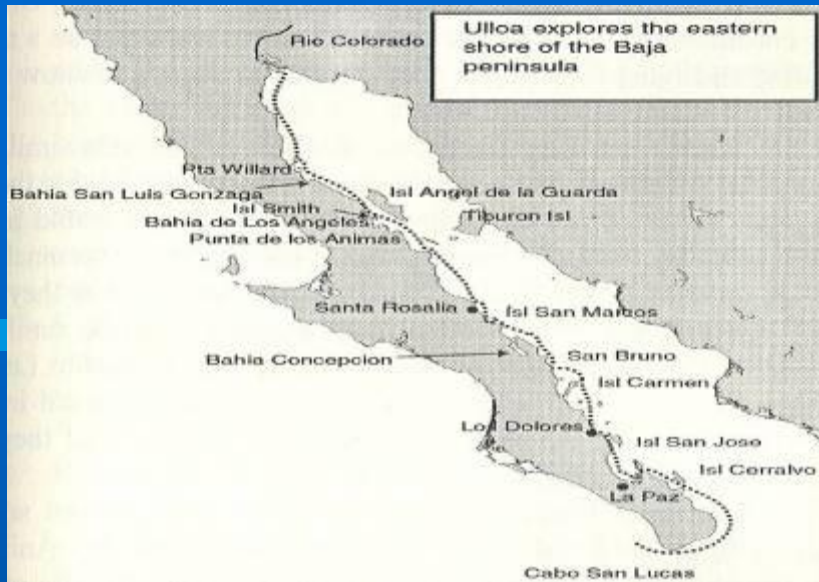
Trinidad 70 tons

Santa Agueda, 240 tons

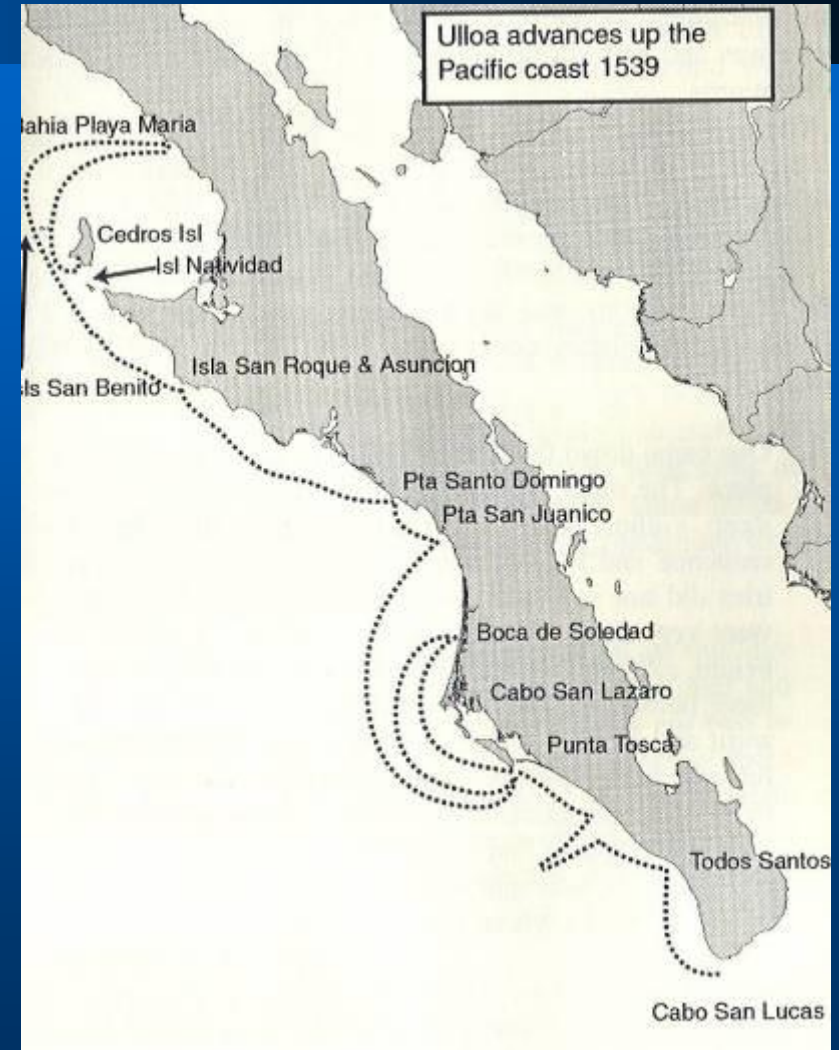
Santo Thomas, 40 tons

Francisco de Ulloa

September 28 – November 6, 1539

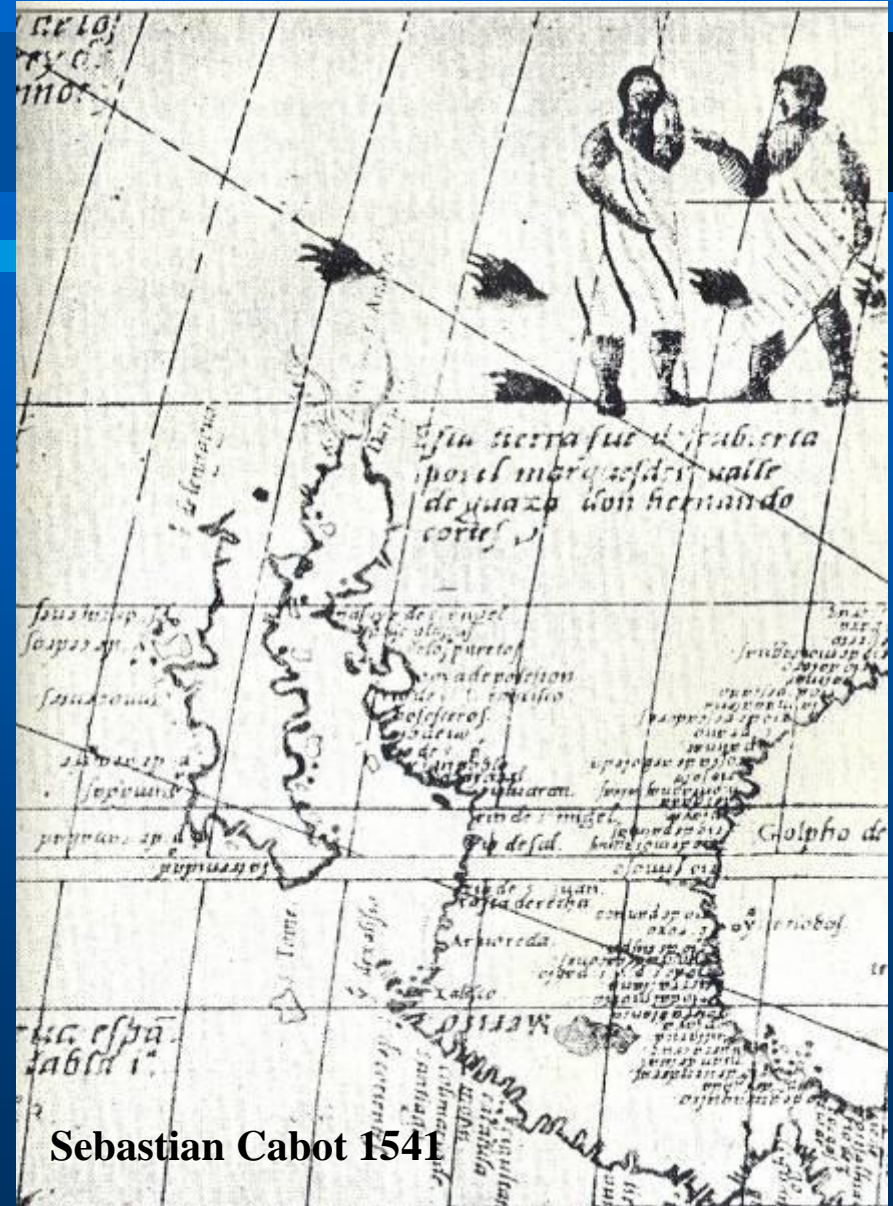
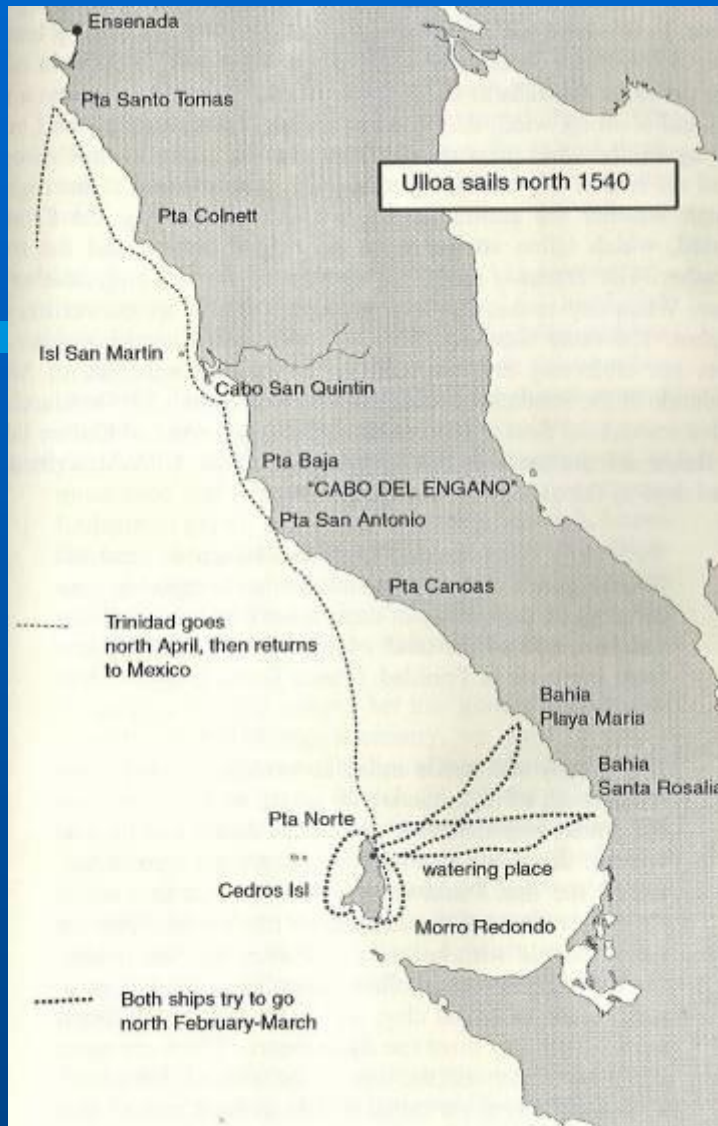


January 1 – February 8, 1540



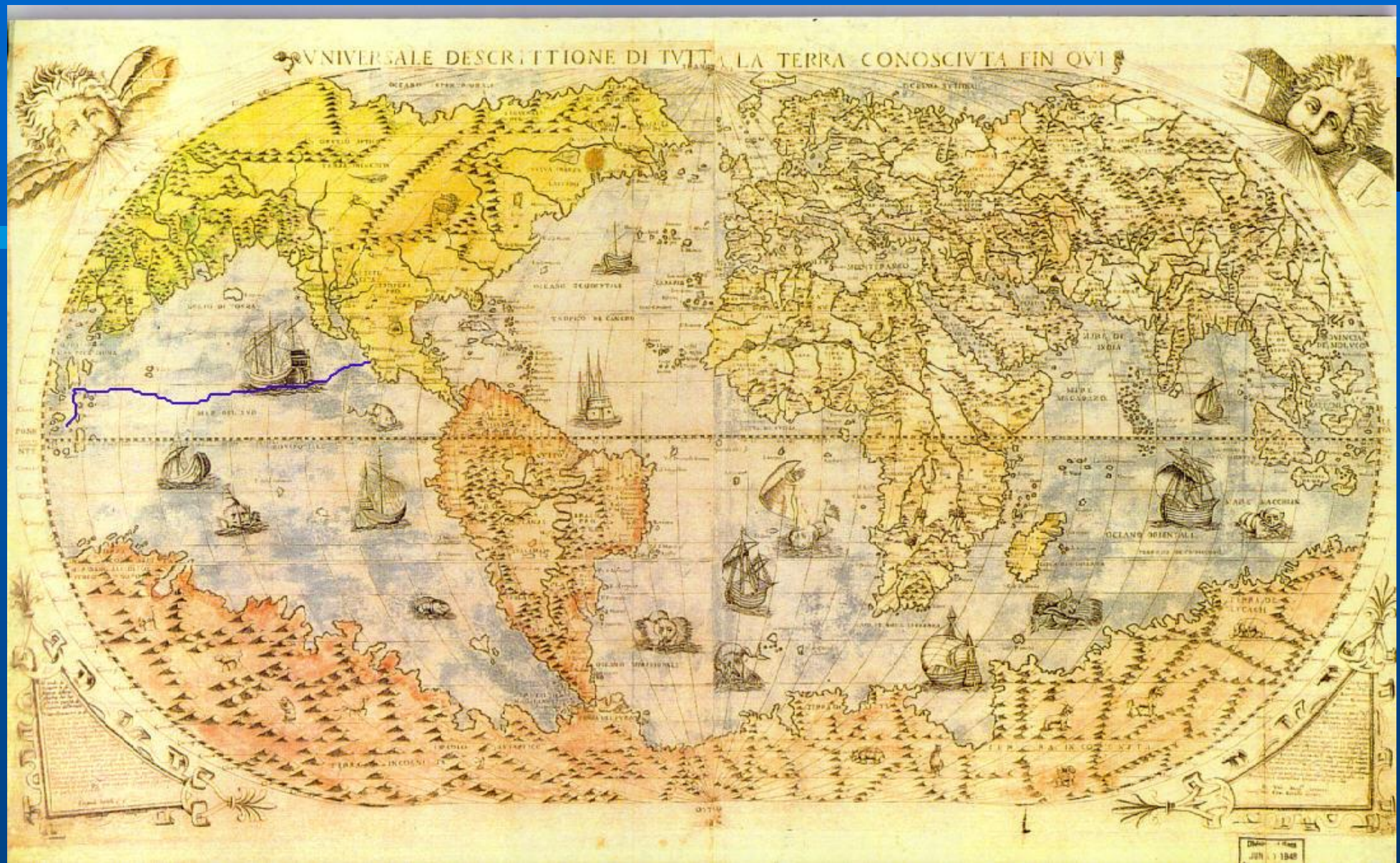
November 7, 1539 - - January 1, 1540

Francisco de Ulloa



February 8 – end of April, 1540

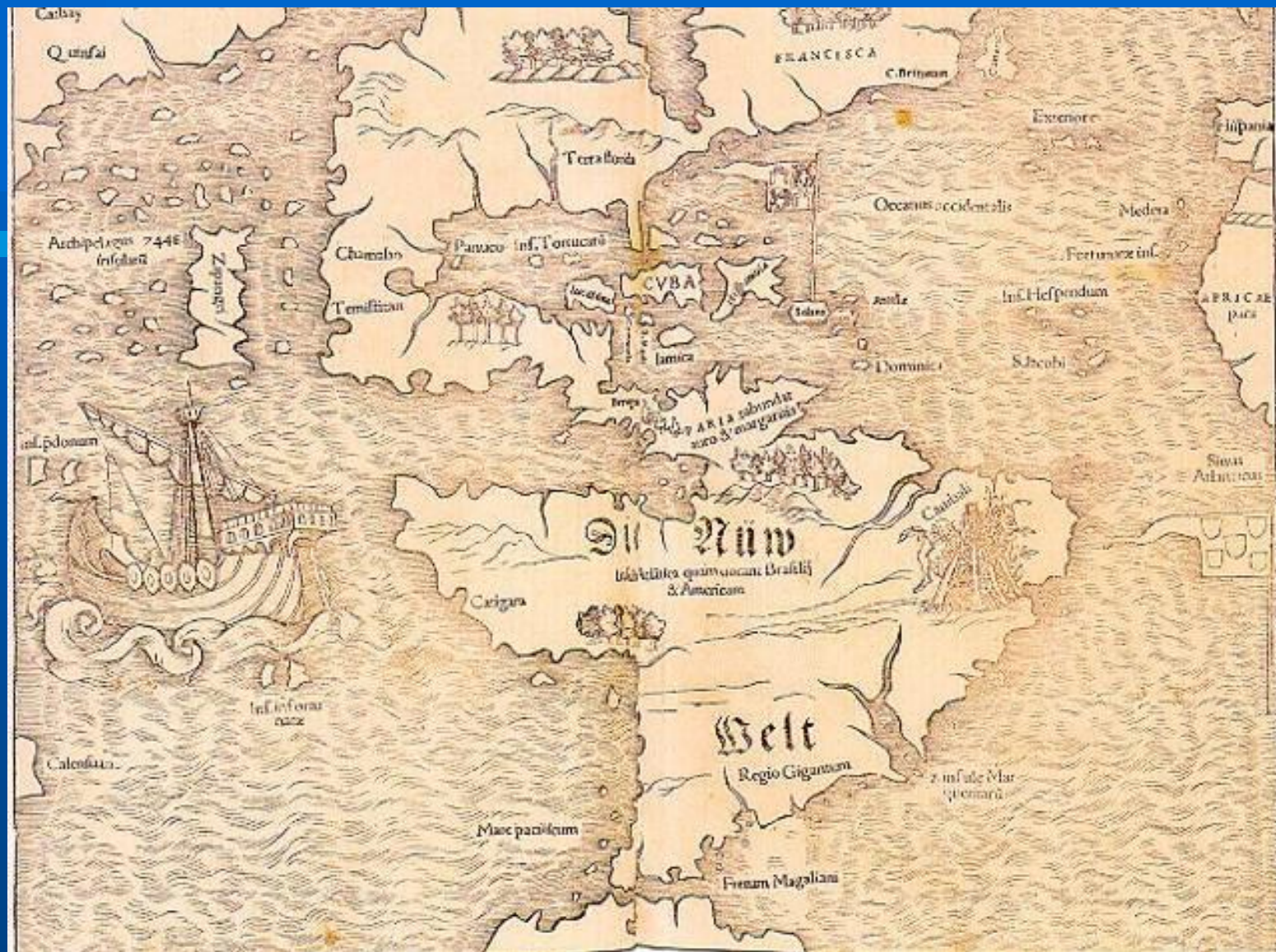
Sebastian Cabot 1541



Domingo del Castillo, 1541

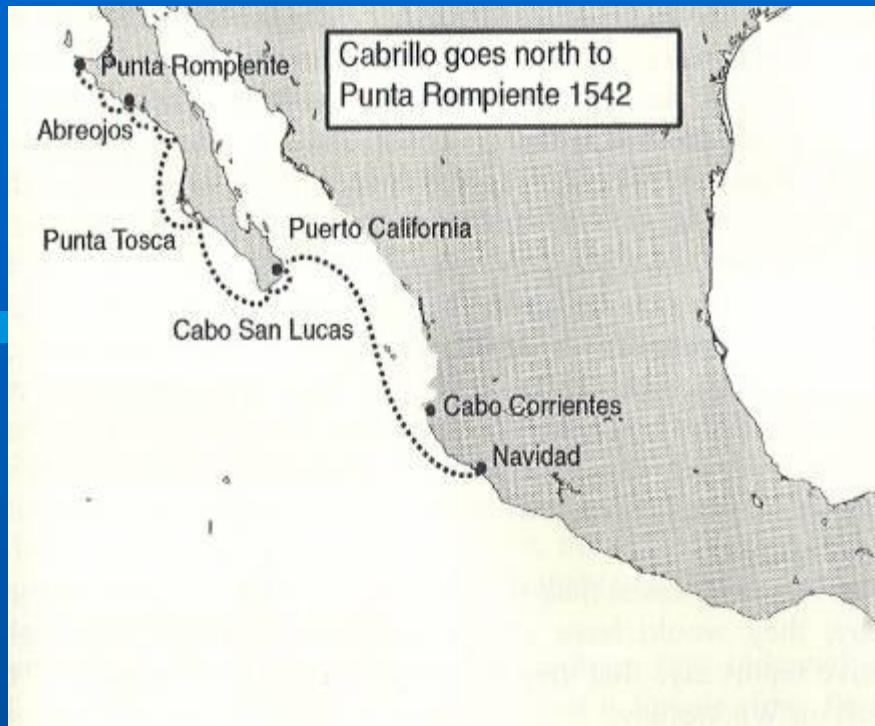
Villalobos 1542-1544





Americas, Sebastian Munster, 1542

Cabrillo

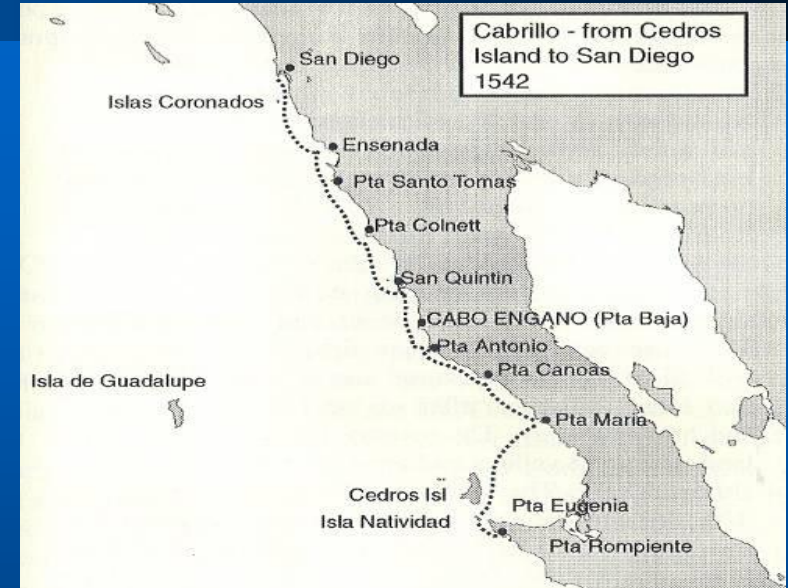


June 27 – August 1, 1542

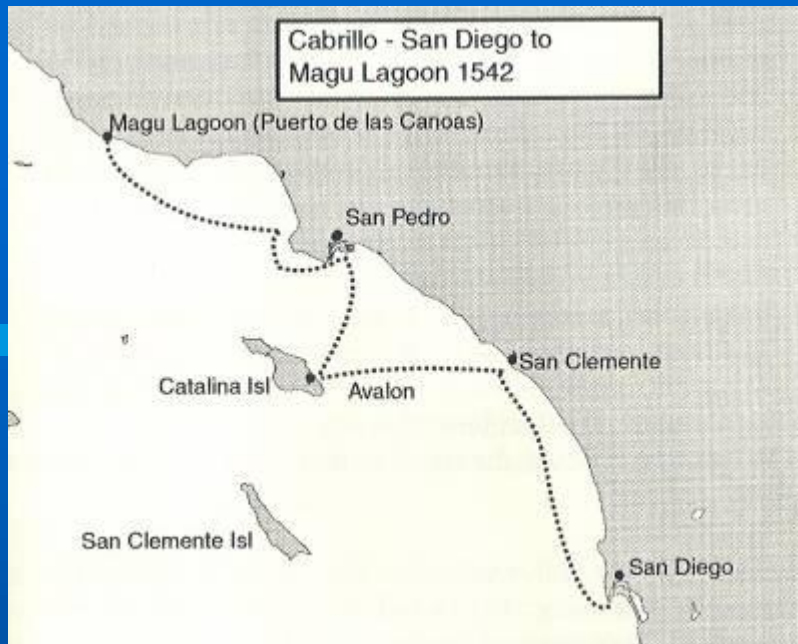
San Salvador 200 tons

Vitoria 40 tons



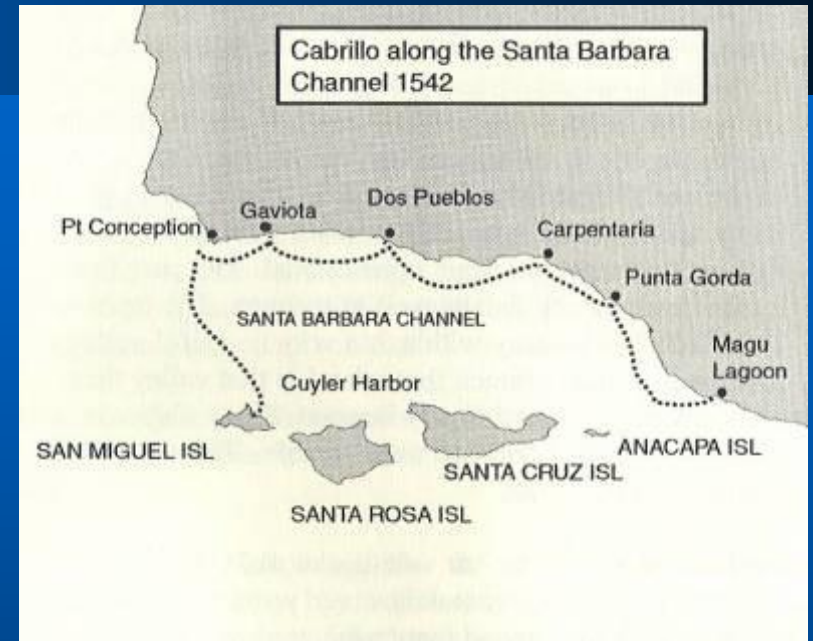


August 2 – September 28,
1542

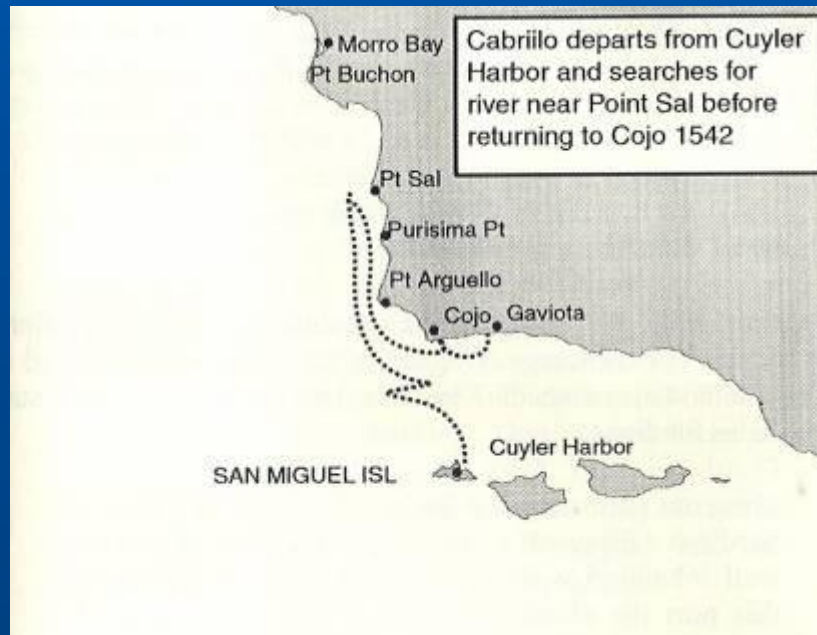


October 3 – October 10, 1542

Cabrillo

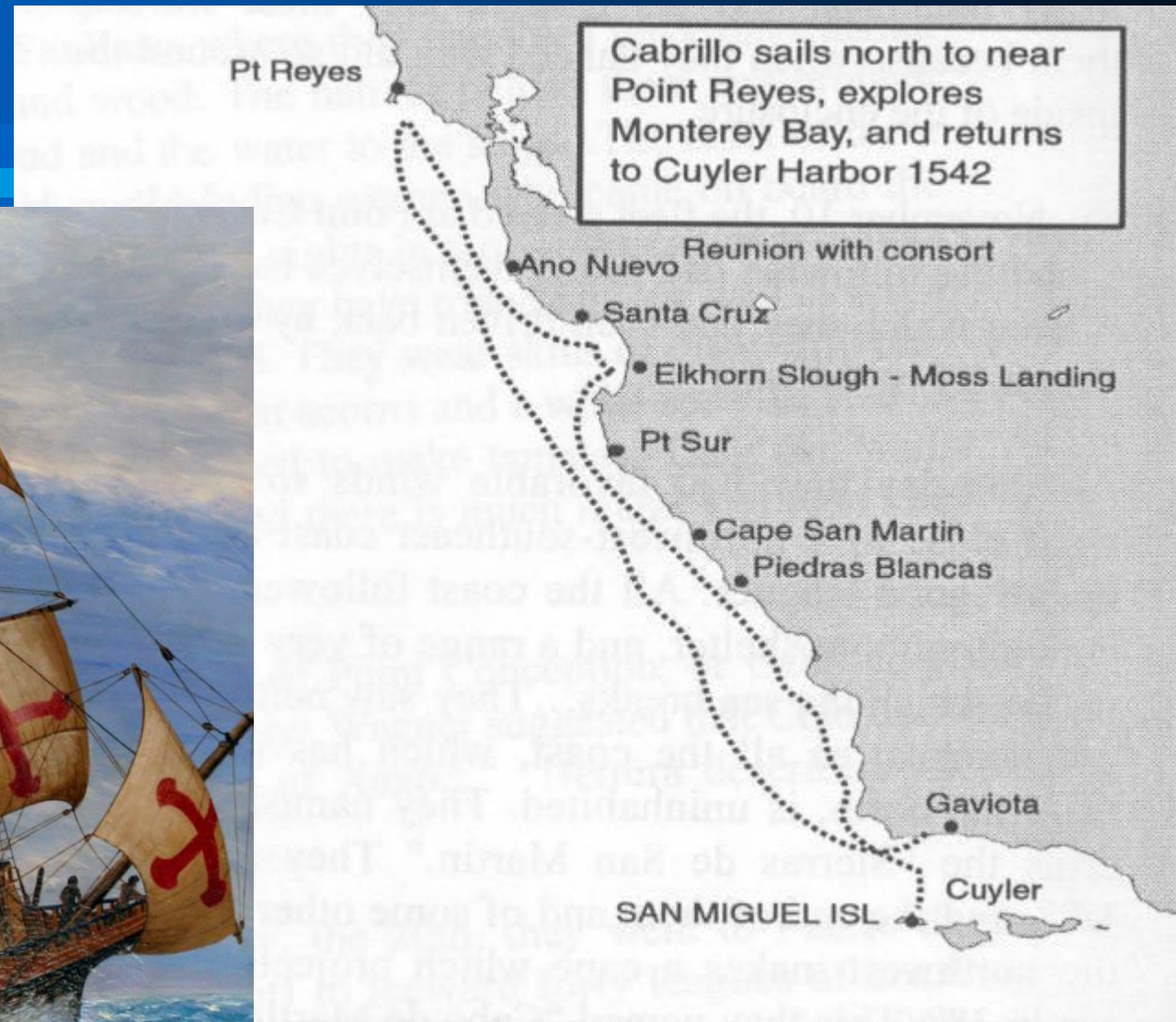


October 13 – October 18, 1542



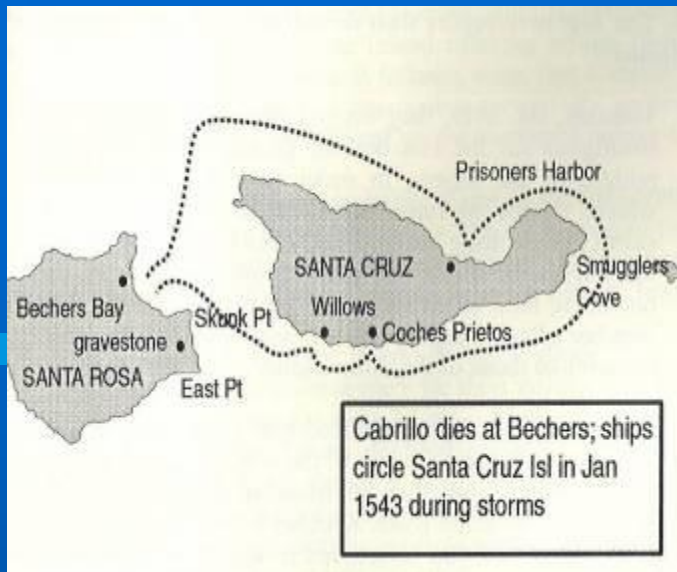
October 25 – November 1, 1542

Cabrillo November 10 – 23, 1543

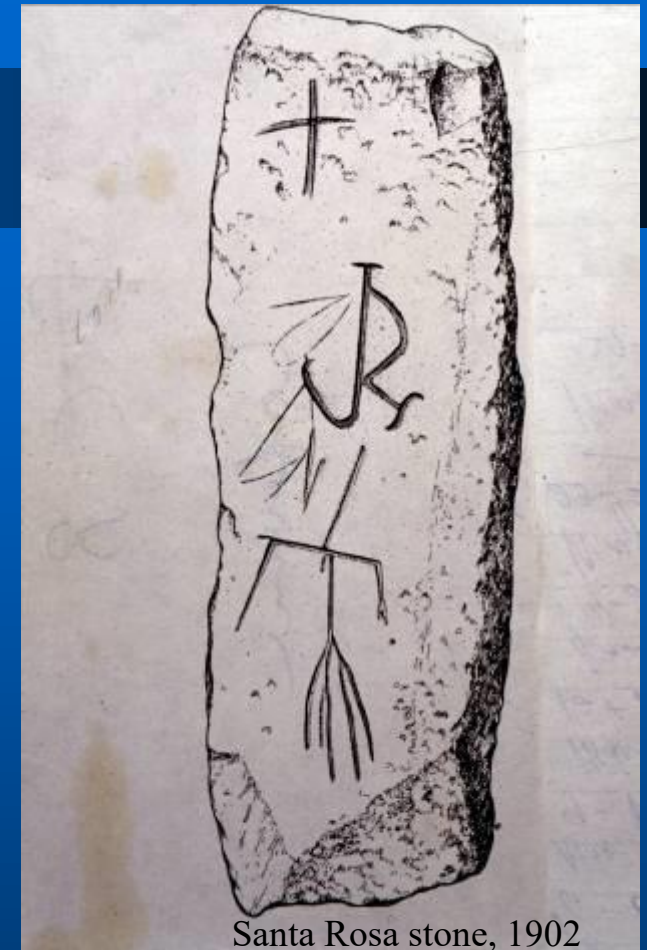
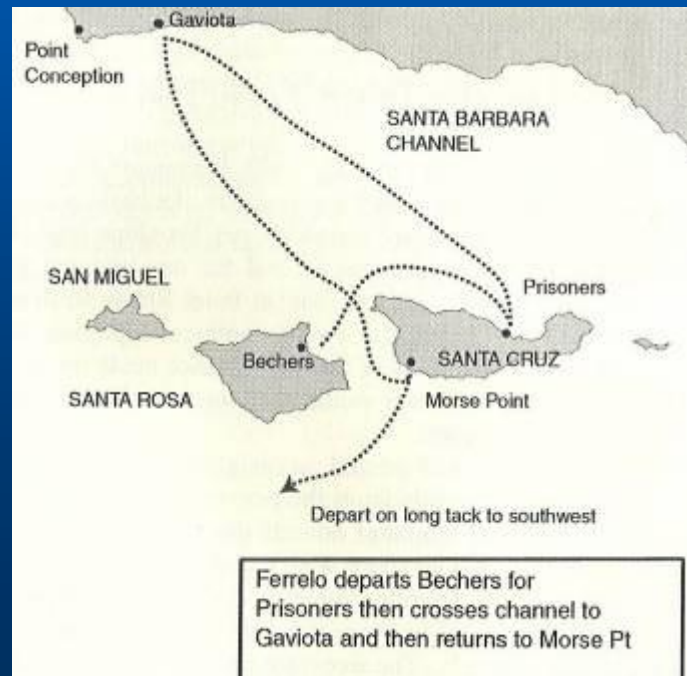


January 19 – 29, 1543

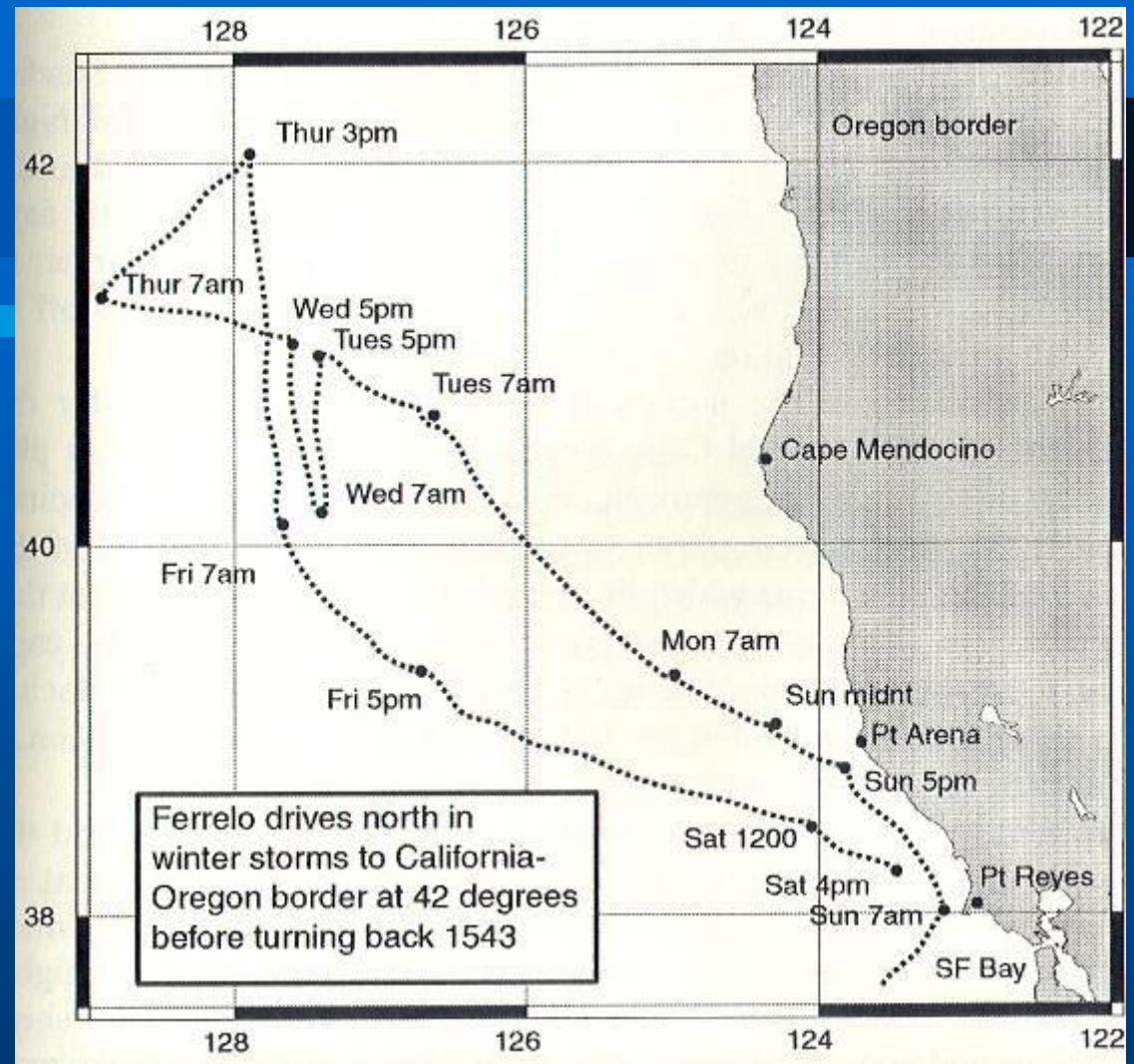
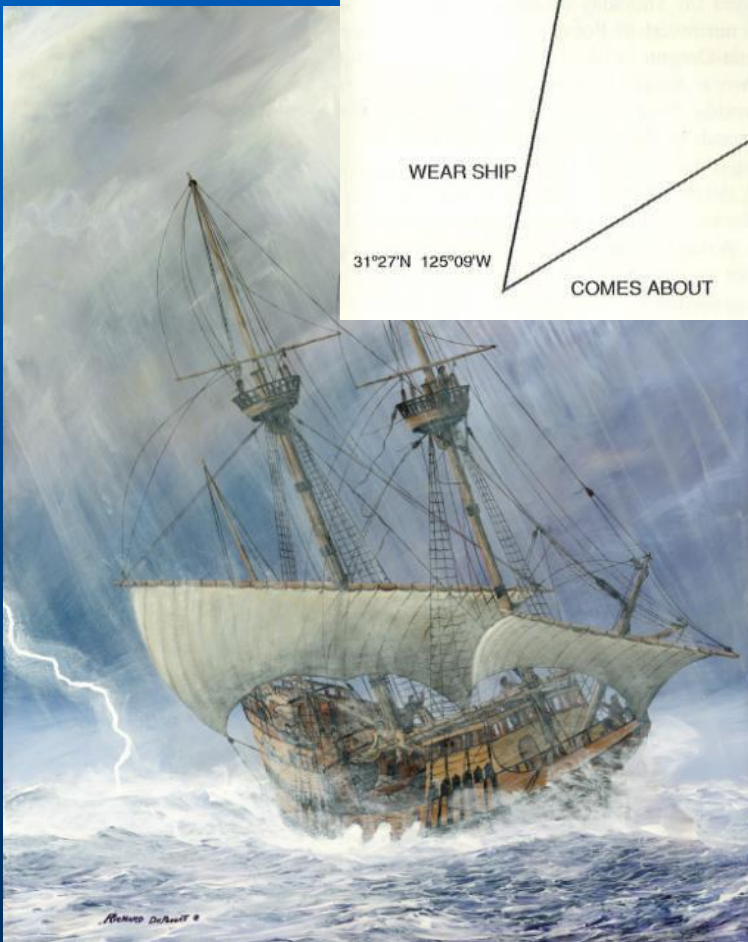
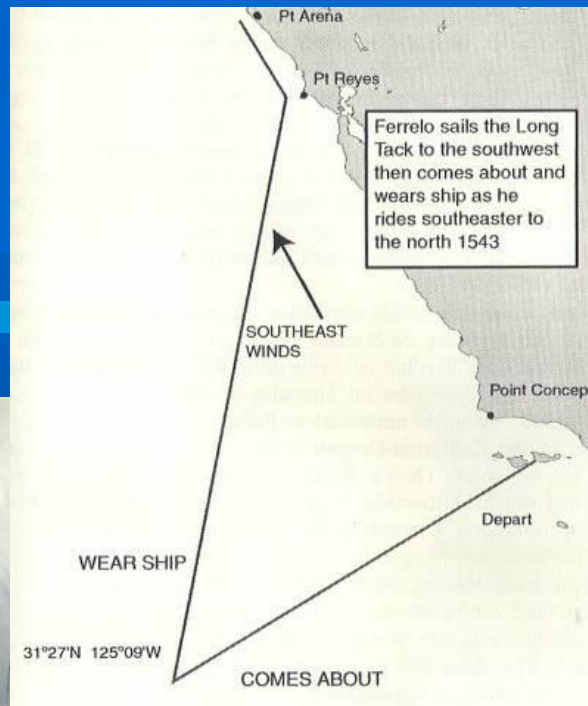
Cabrillo



February 14 – 18, 1543



January 3, 1543

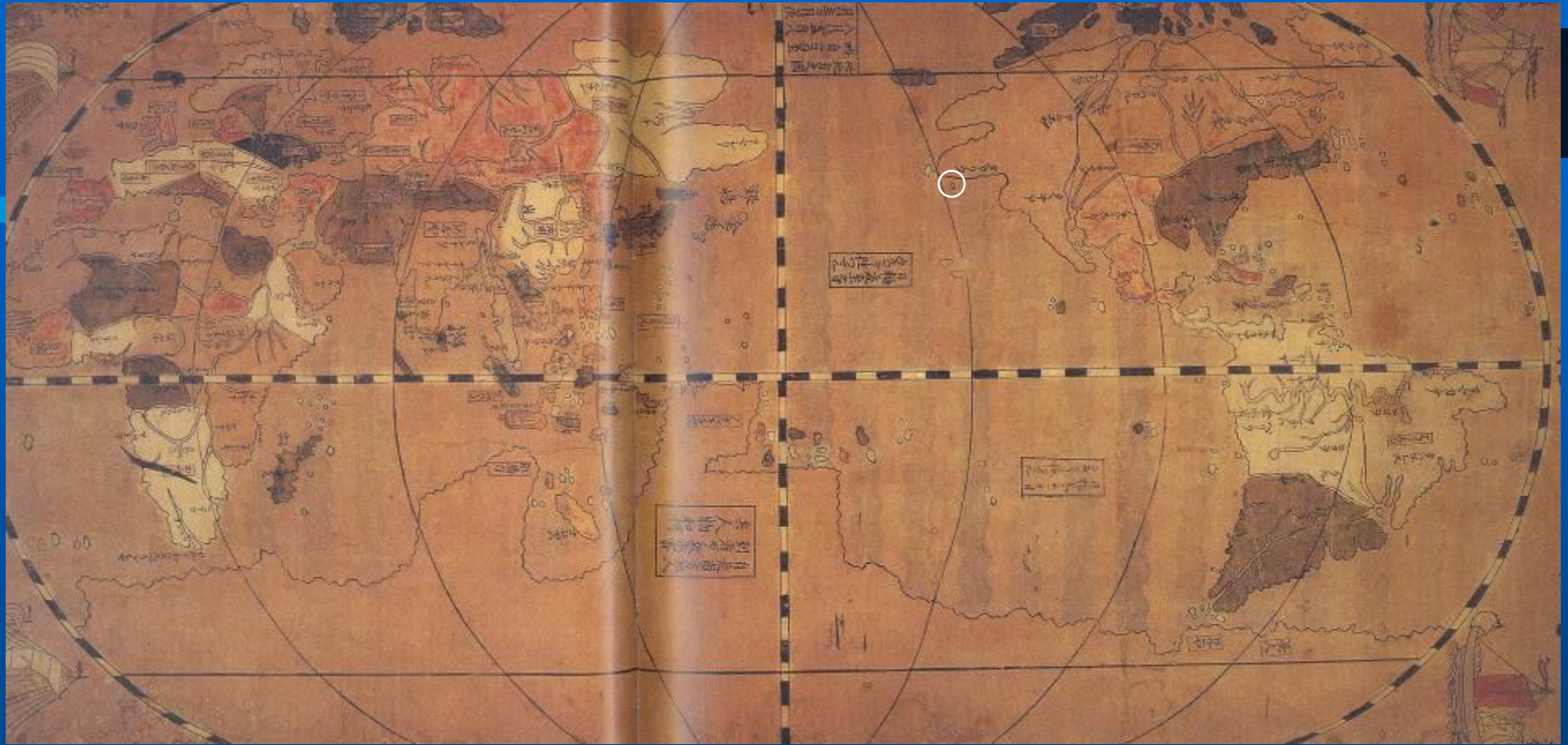


18 – March 3, 1543

Bartolome Ferrelo



Mercator 1569



Bankoku-Sozu, 1645

Mercator, 1595



Nicolaus Copernicus

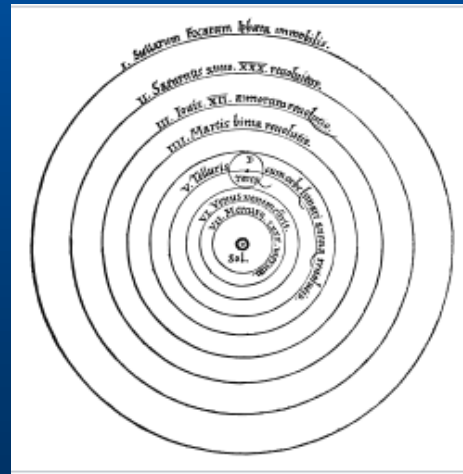


NICOLAI CO
PERNICI TORINENSIS
DE REVOLUTIONIBVS ORBI
um coelestium, Libri VII.

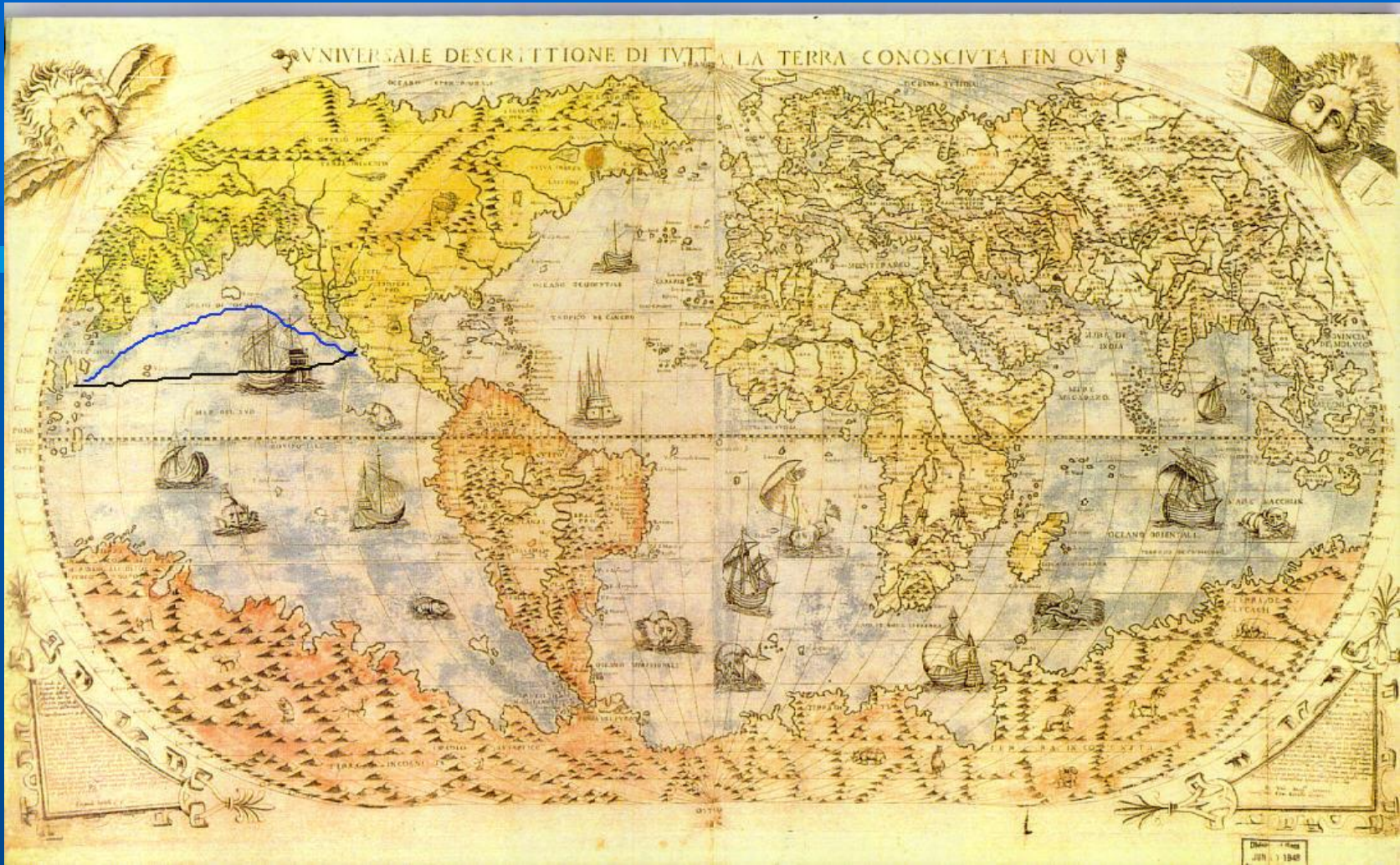
Habes in hoc opere iam recens nato, & ædito,
studiose lector, Motus stellarum, tam fixarum,
quàm erraticarum, cum ex veteribus, tum etiam
ex recentibus observationibus restitutos: & no
uis insuper ac admirabilibus hypothesibus or
natos. Habes etiam Tabulas expeditissimas, ex
quibus eisdem ad quodvis tempus quàm facili
me calculare poteris. Igitur eme, lege, frue.

Ætæ ætæque vobis salutem.

Norimbergæ apud Ioh. Petreum,
Anno M. D. XLIII.

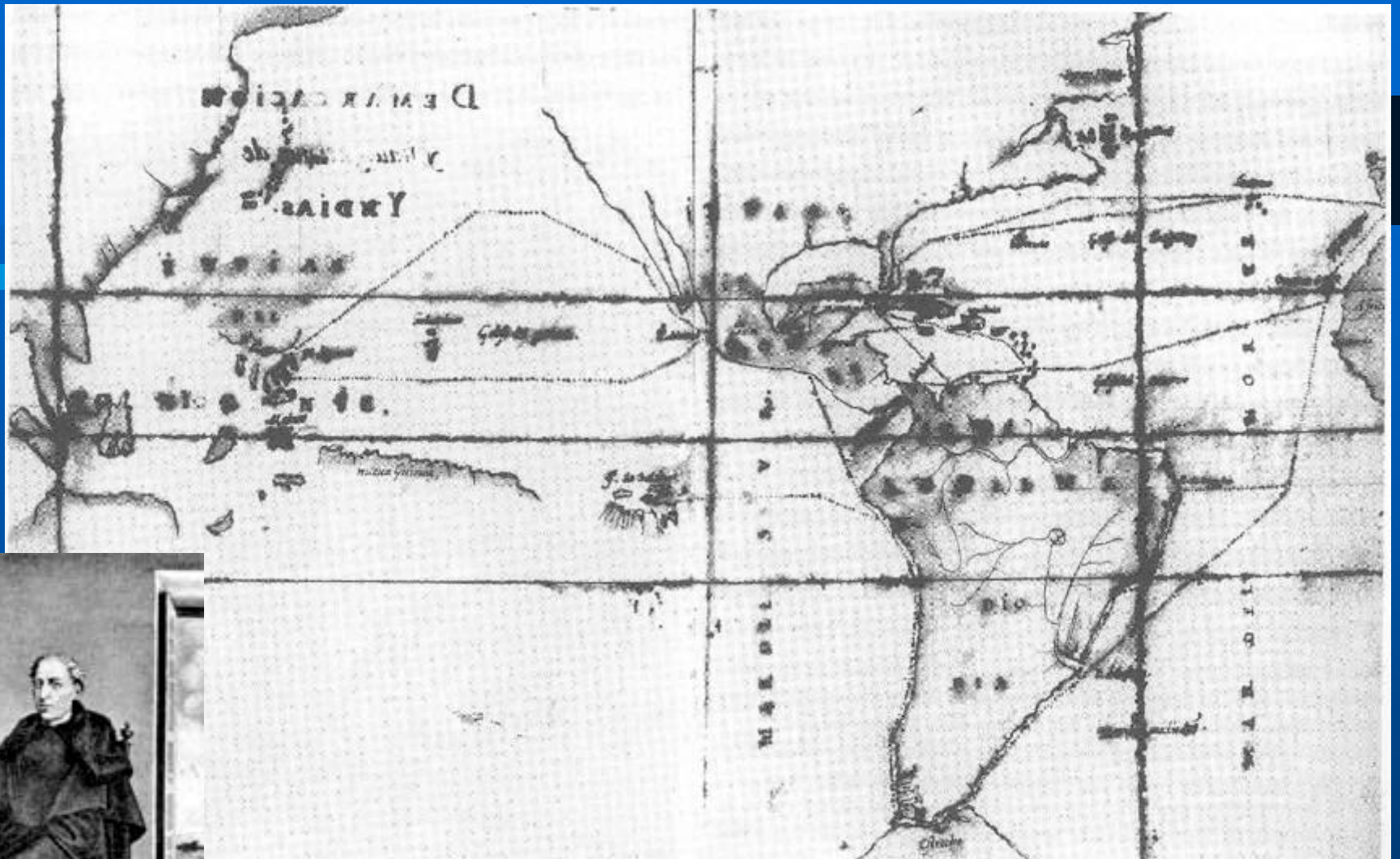


De revolutionibus, 1543



Legazpi and Urdenata 1564-1565

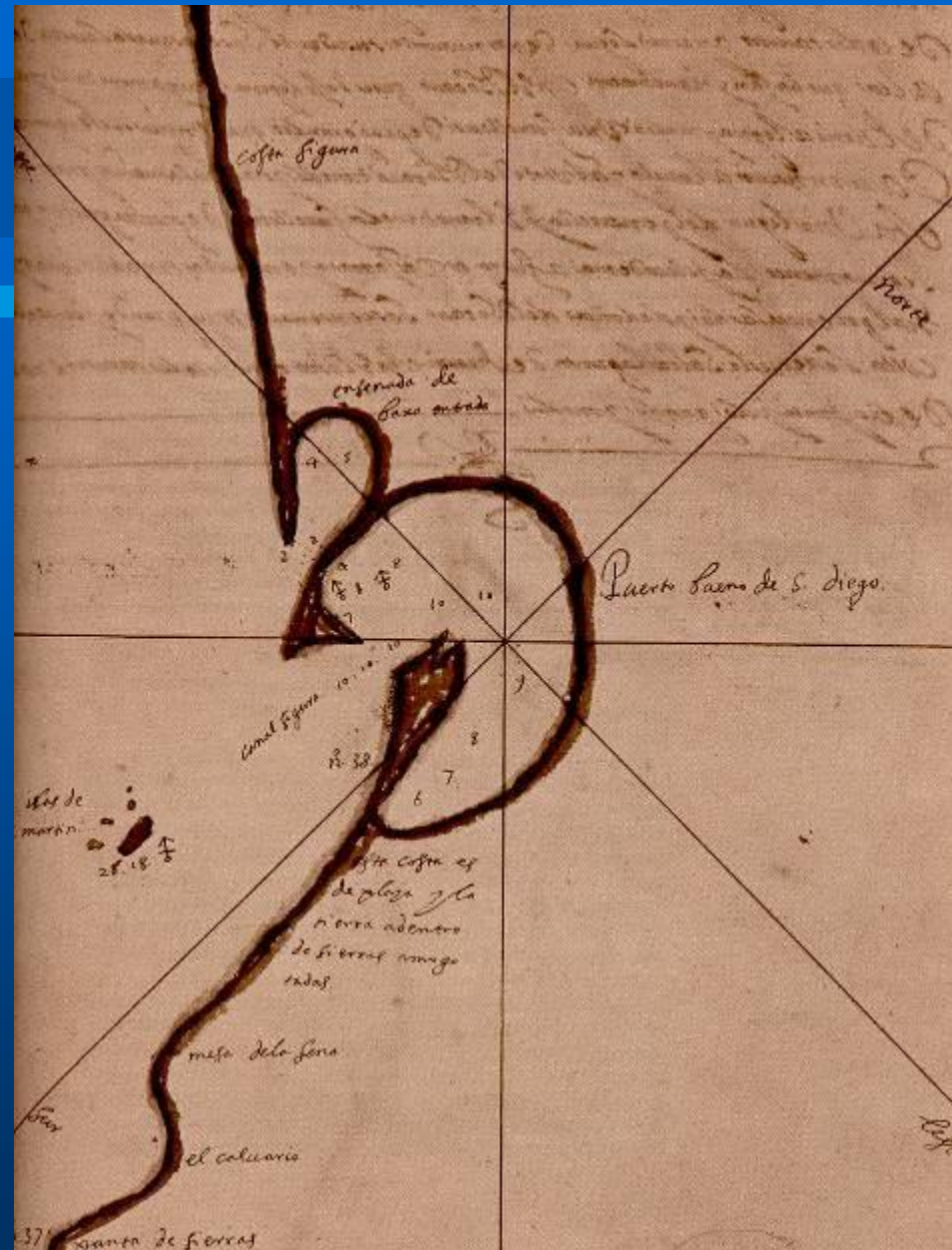
Manila conquered 1570

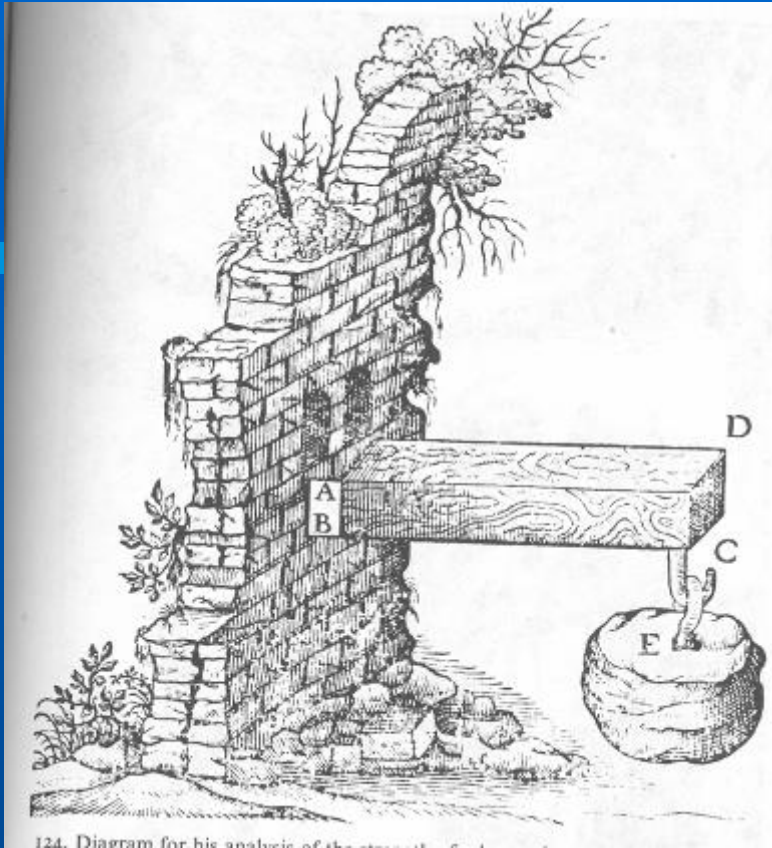


Velasco, 1575

Andres de Urdaneta 1564-1565

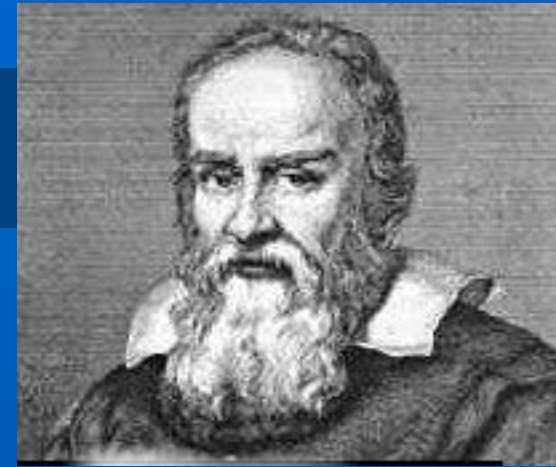
After Vizcaino, 1603





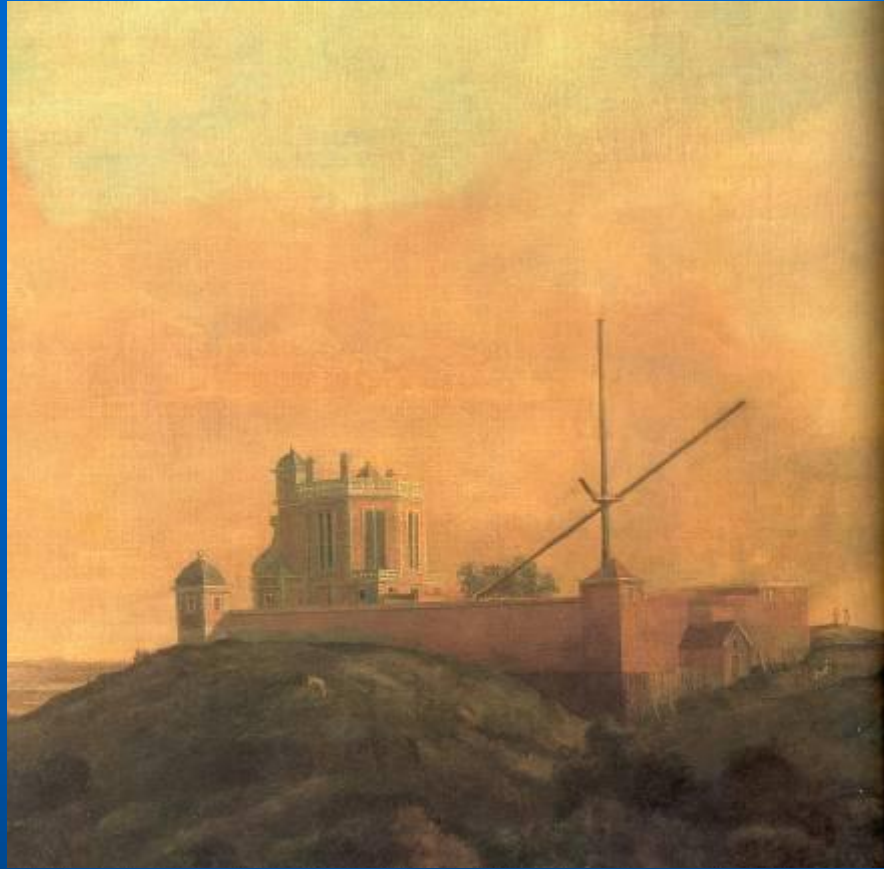
Discourse on Two New Sciences 1638

Arsenal of Venice

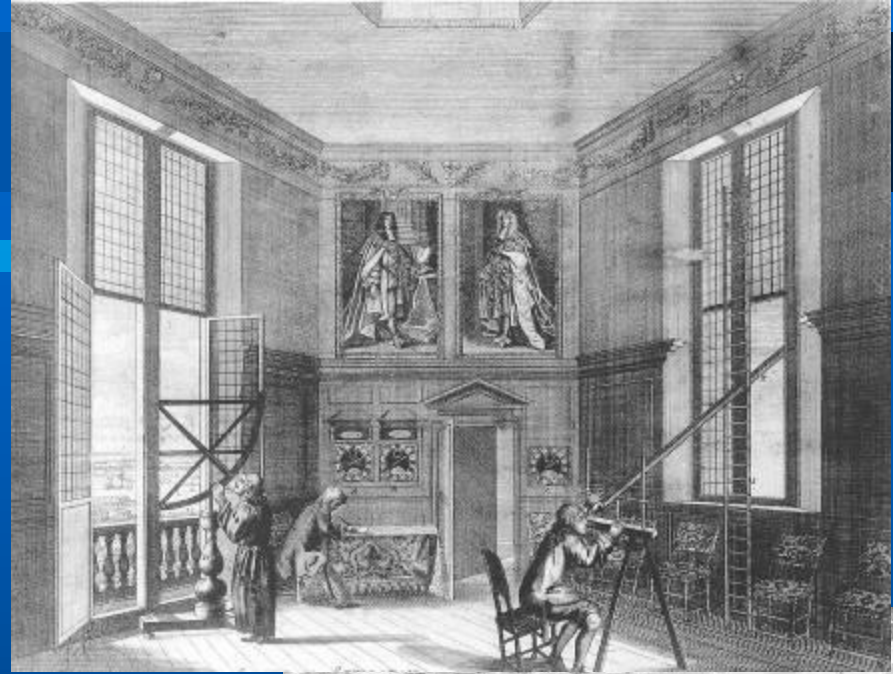


Galileo 1564-1642

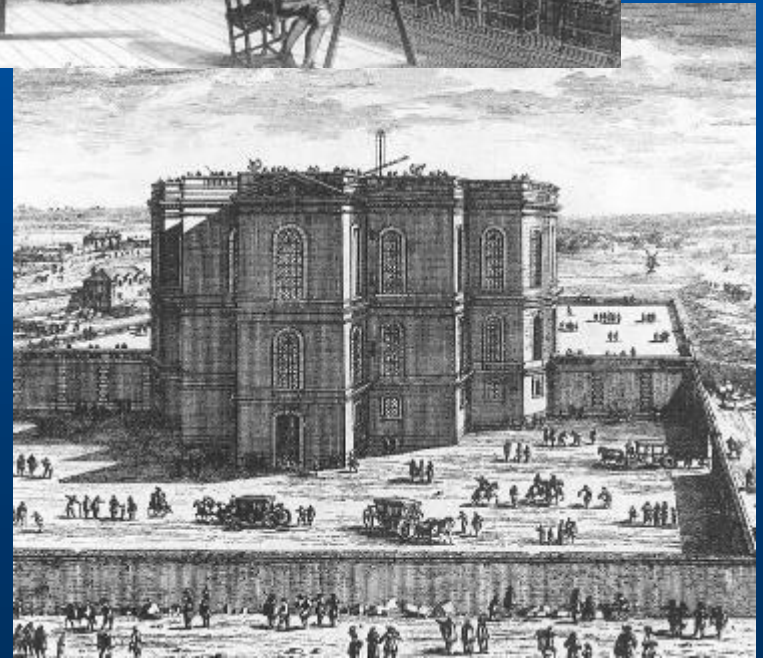


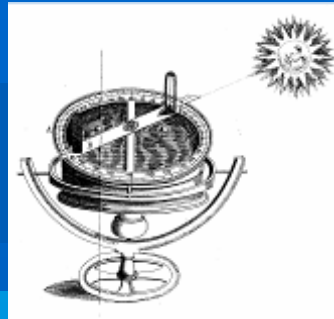
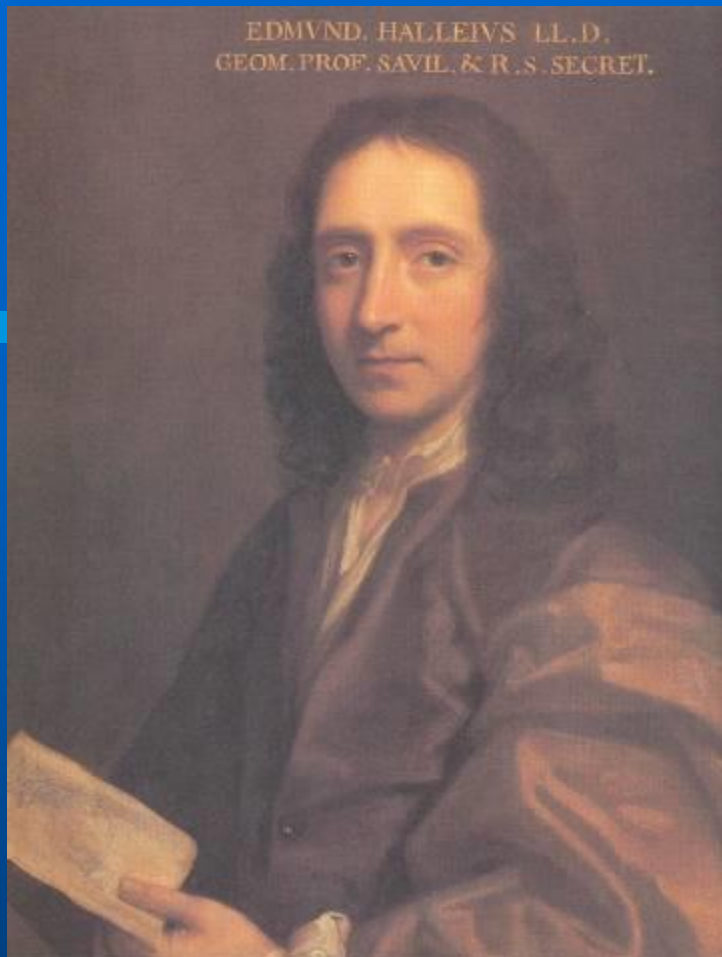


Greenwich Observatory, 1675

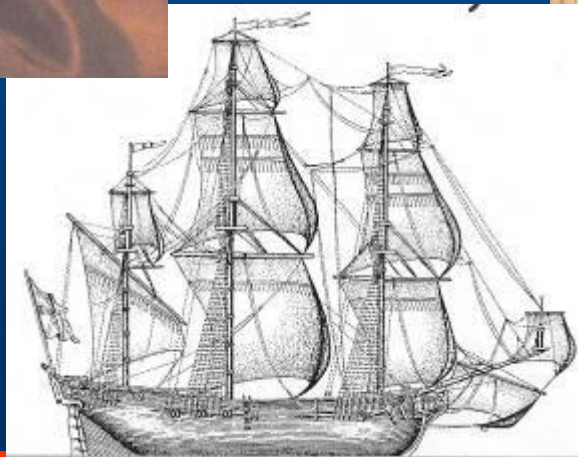
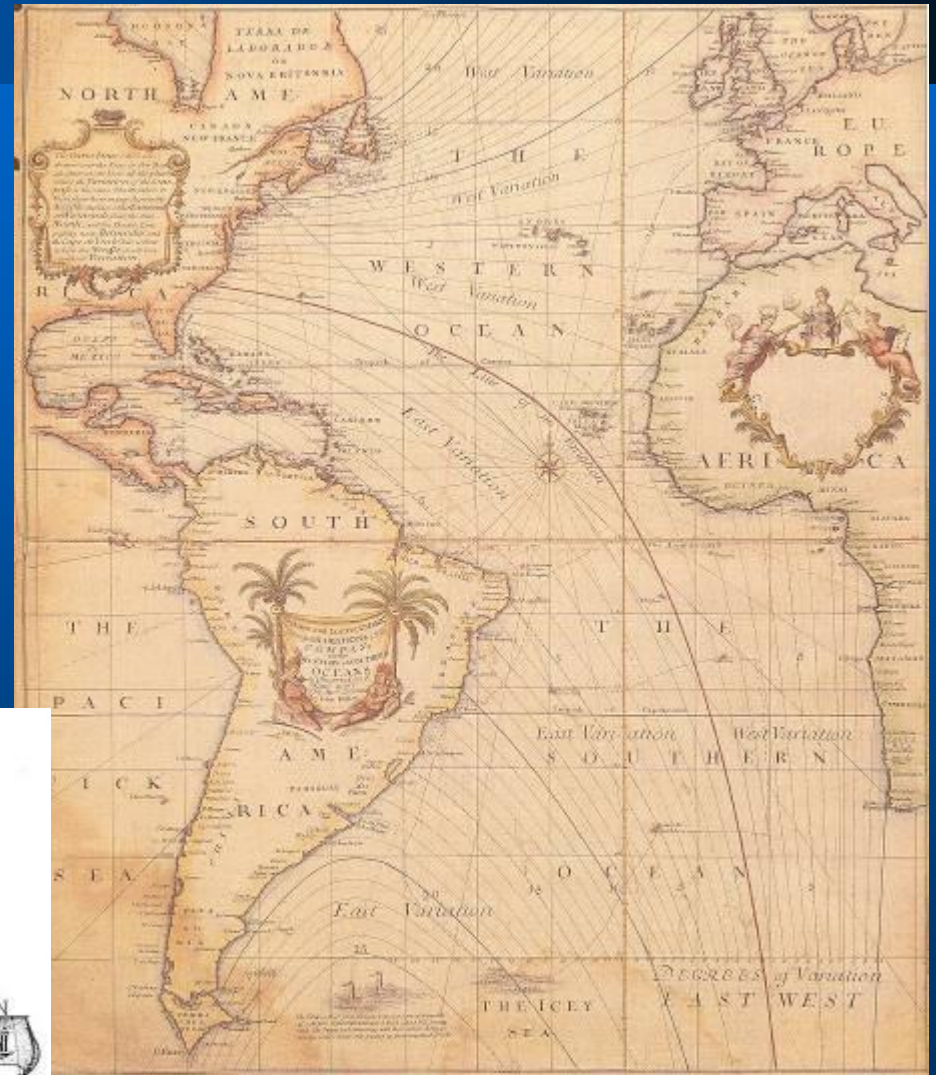


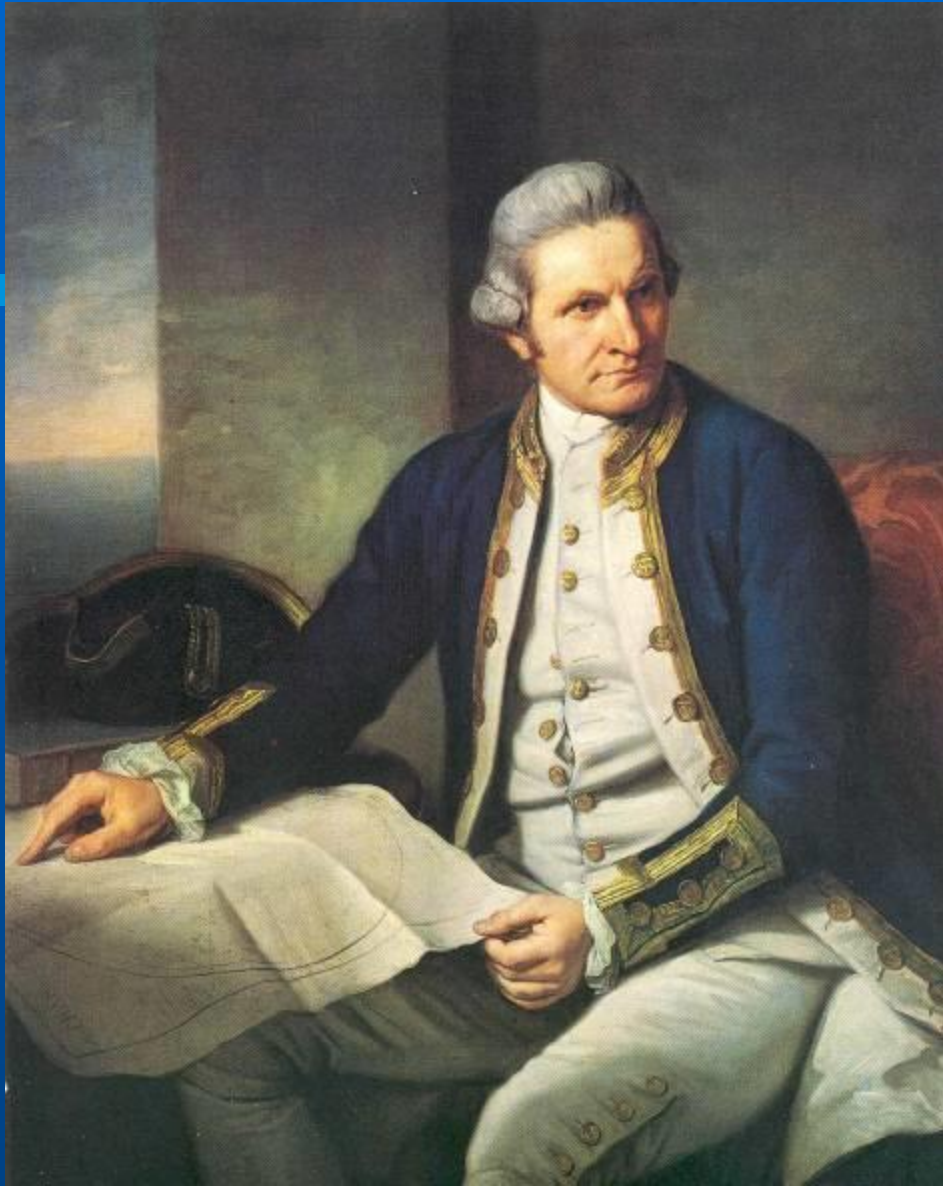
Paris Observatory
1672





Edmund
Halley,
1656-1742

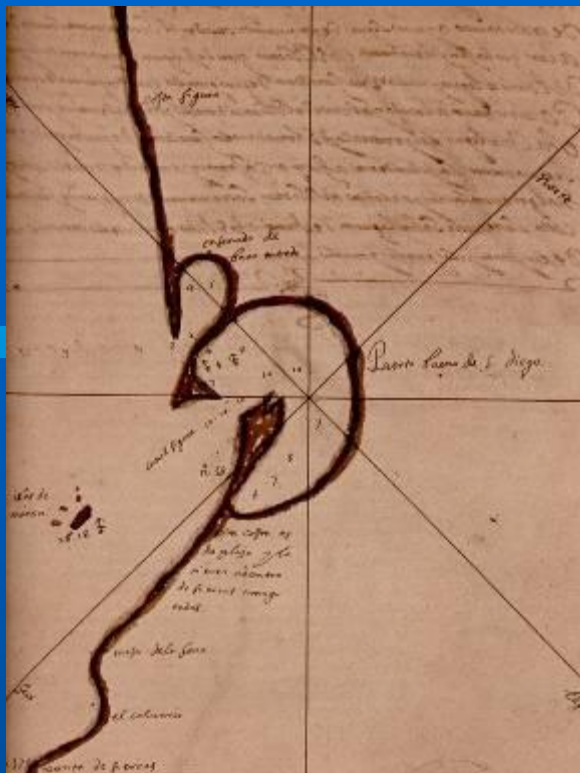




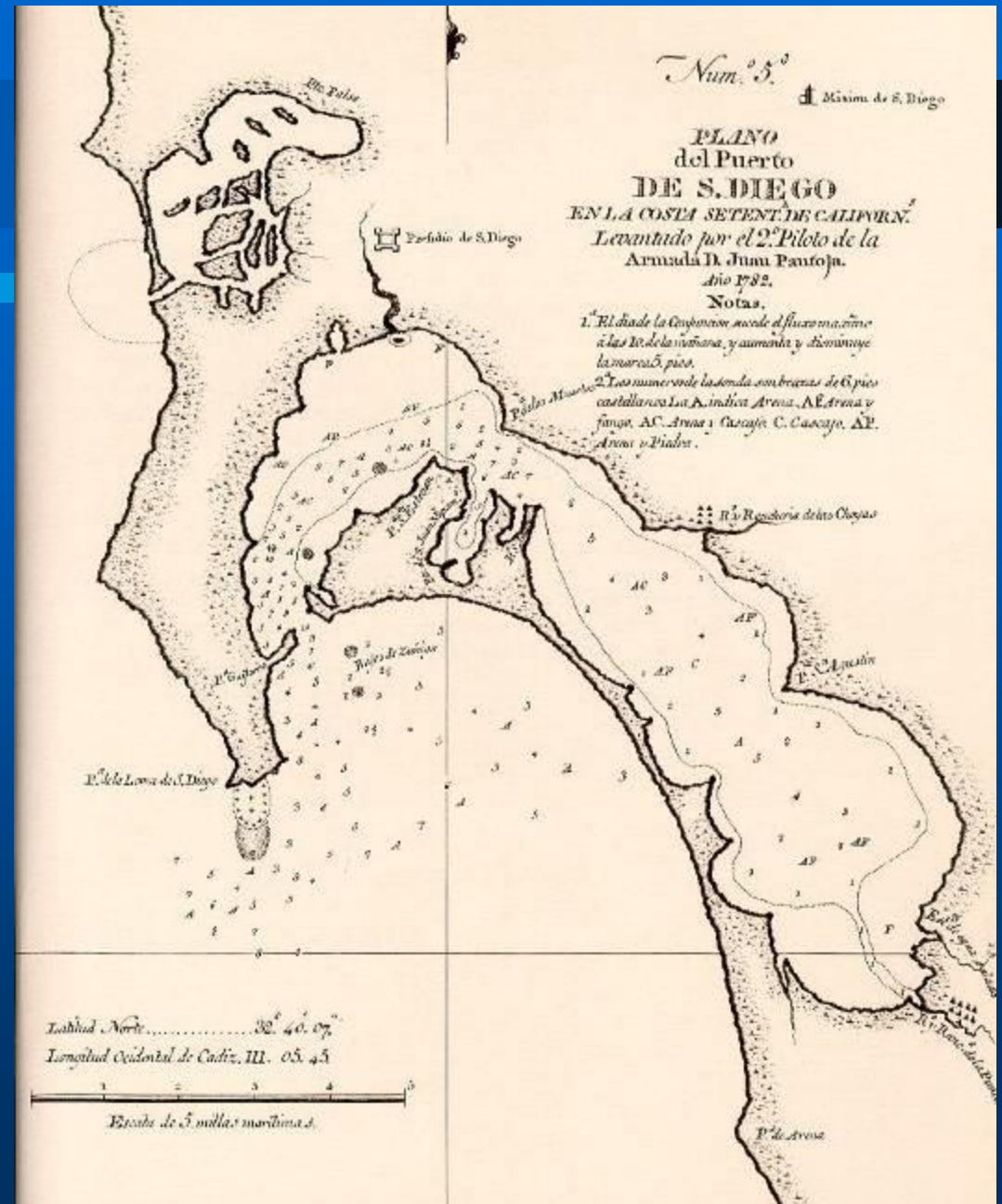
James Cook, 1728-1779



Joseph Banks, 1743-1820



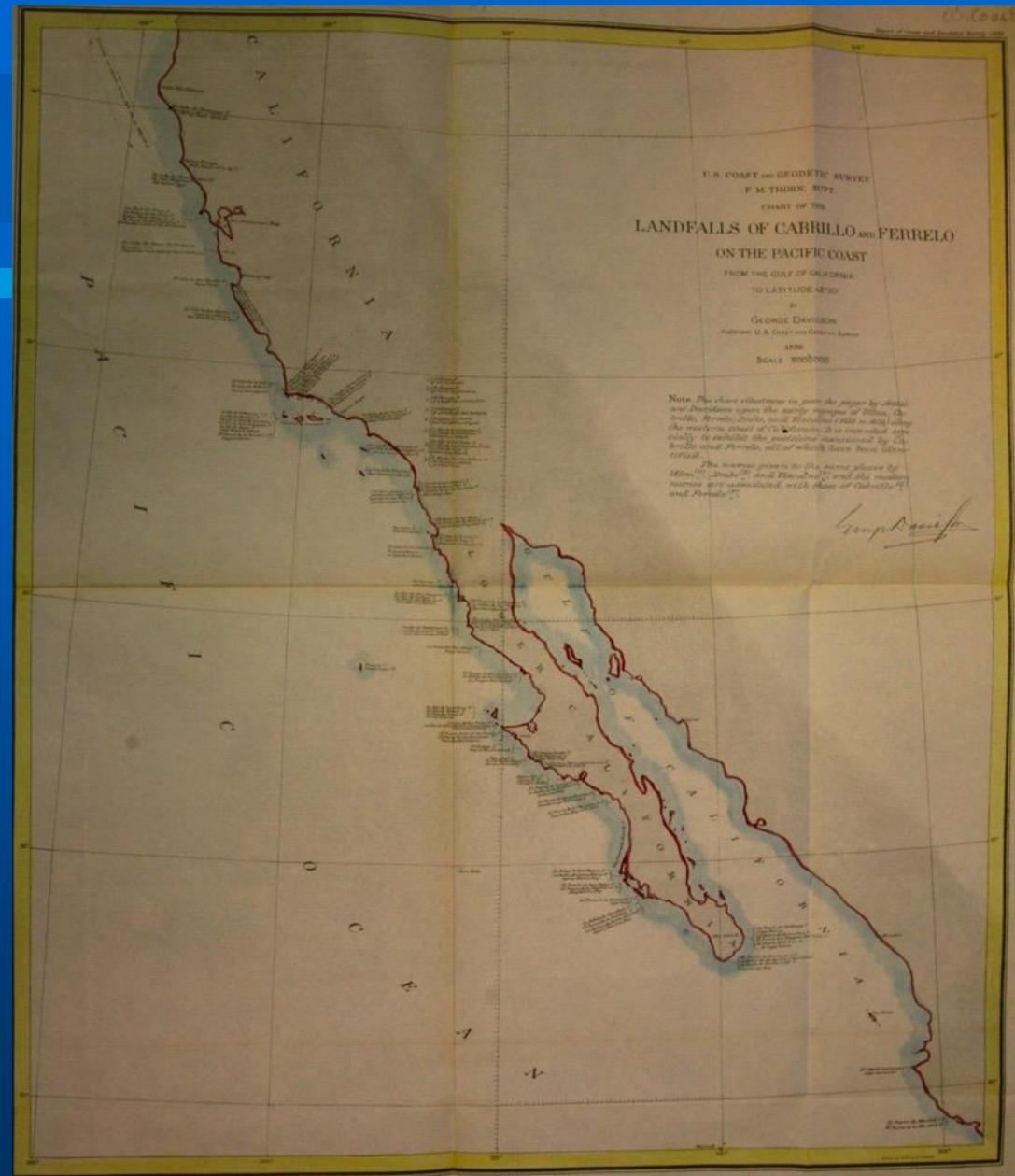
After Vizcaino, 1603



Juan Pantoja, pilot, 1782

Landfalls of Cabrillo and Ferrelo

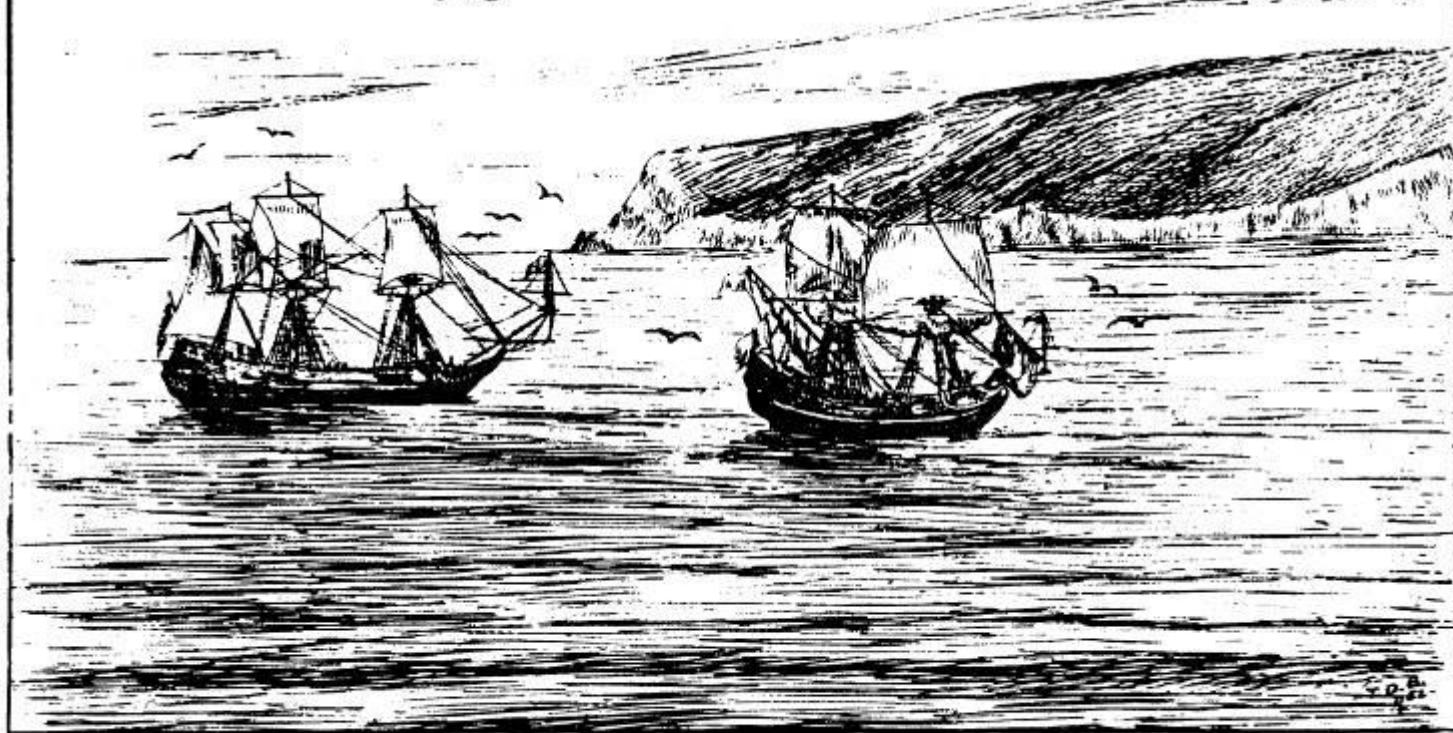
U.S. Coast Survey, 1886



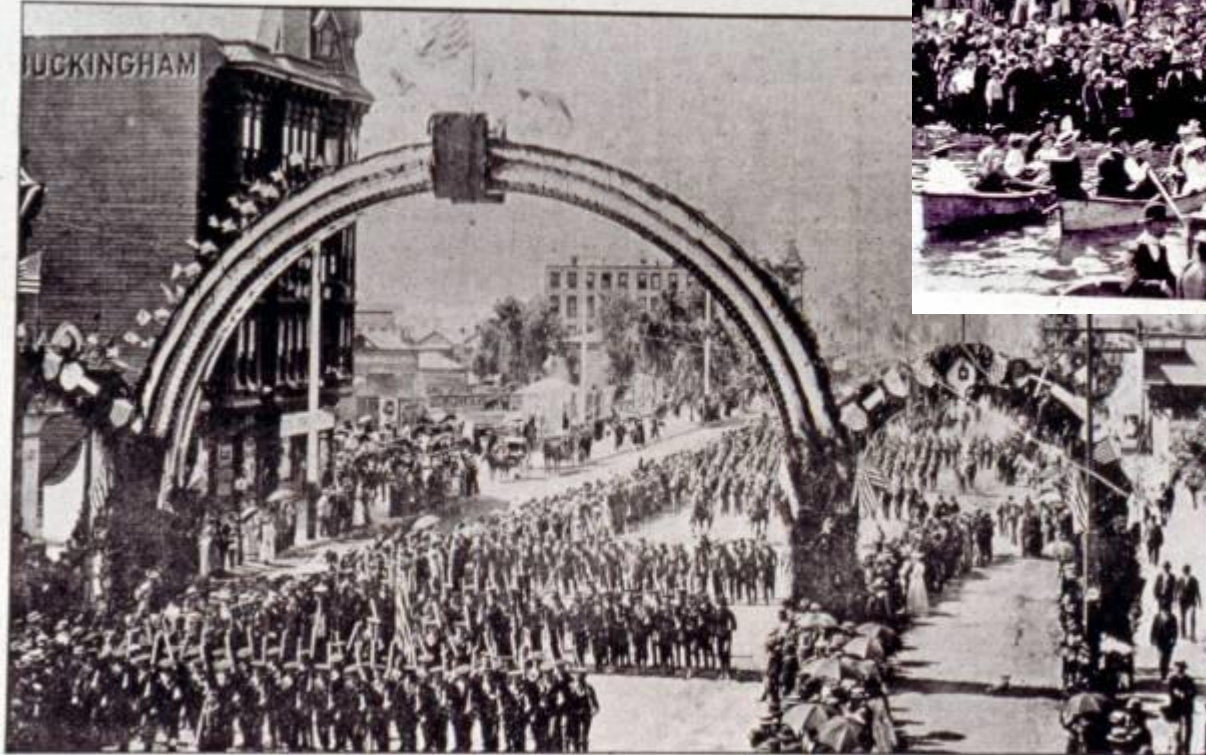
San Salvador as dramatic character: 1892

CABRILLO ENTERING SAN DIEGO BAY.

On Sept. 28 A.D. 1542, Juan Rodriguez Cabrillo in command of two Spanish ships, discovered & entered the Bay of San Diego, which he described as "a land-locked and very good harbor."



1542 SAN DIEGO 1892

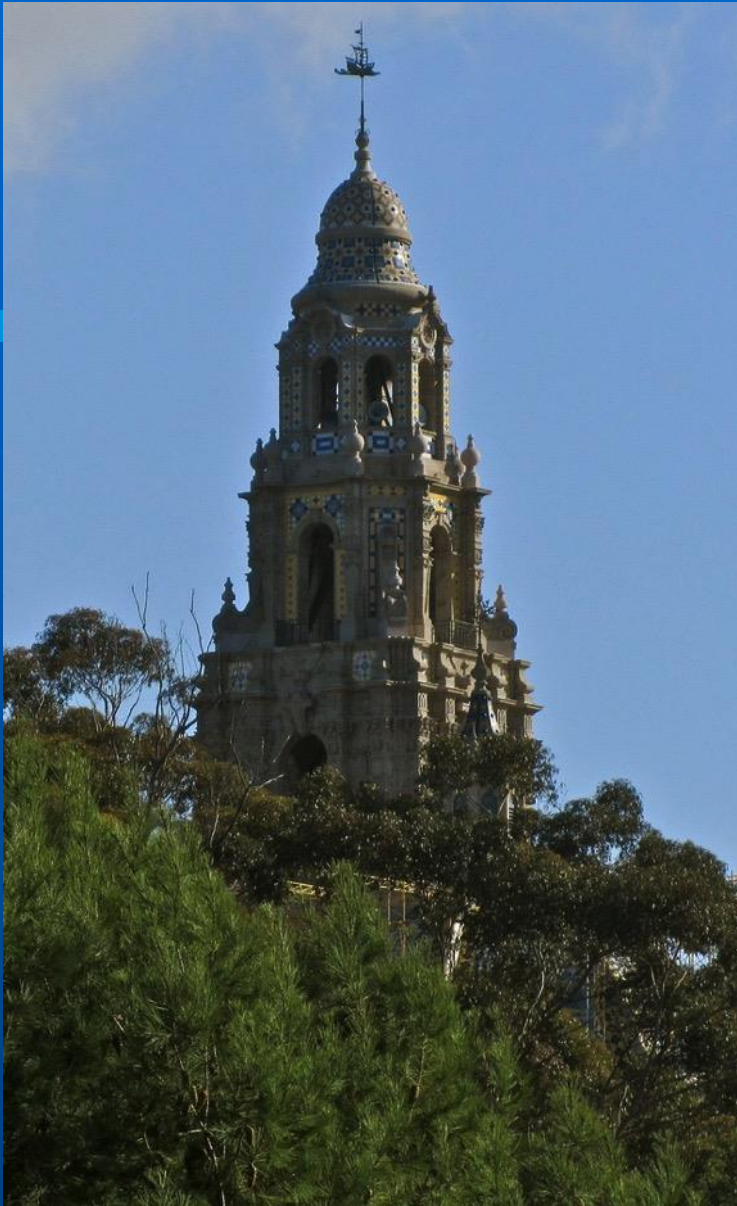


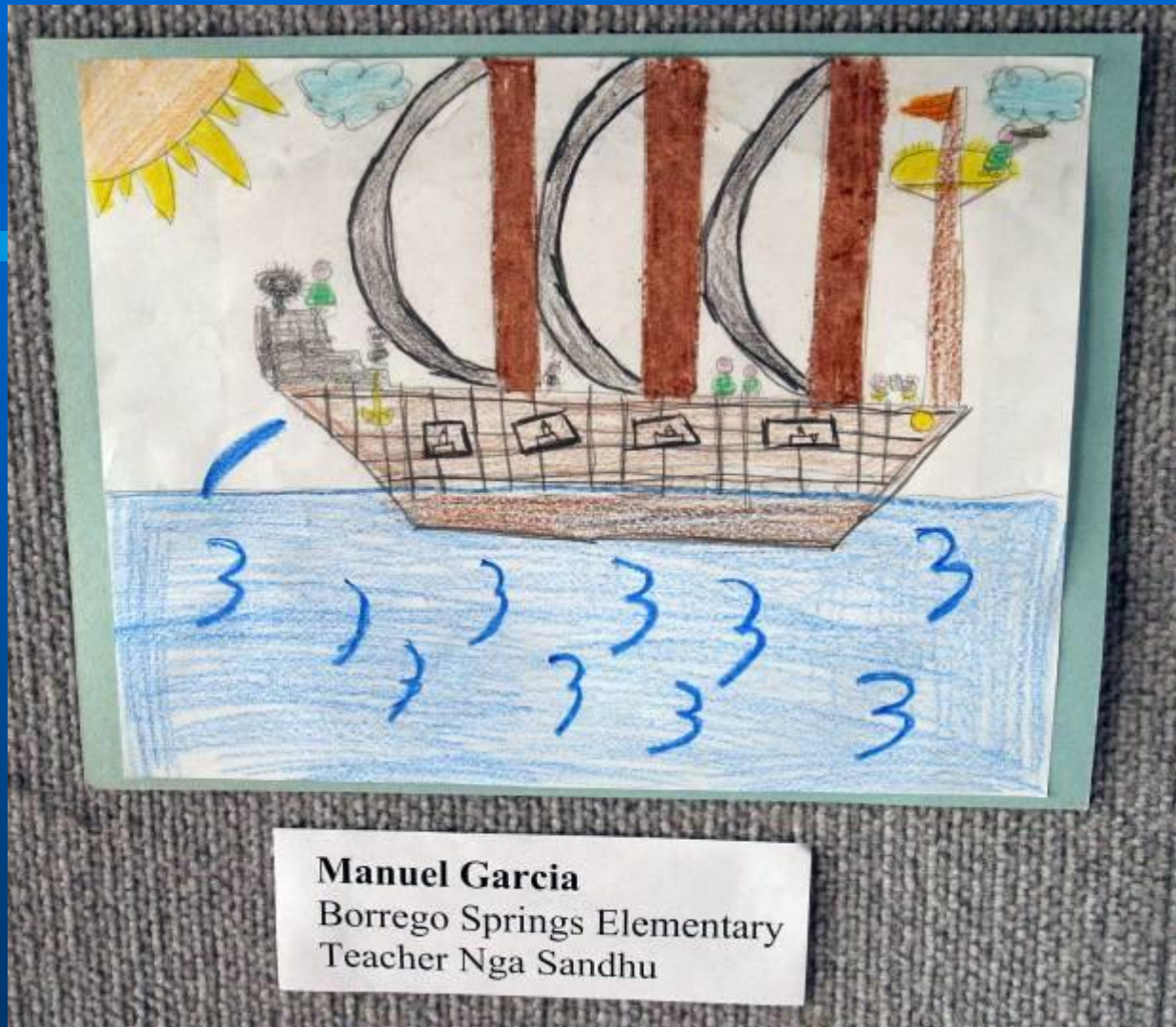
THE CABRILLO CELEBRATION PROCESSION PASSING UP D STREET.









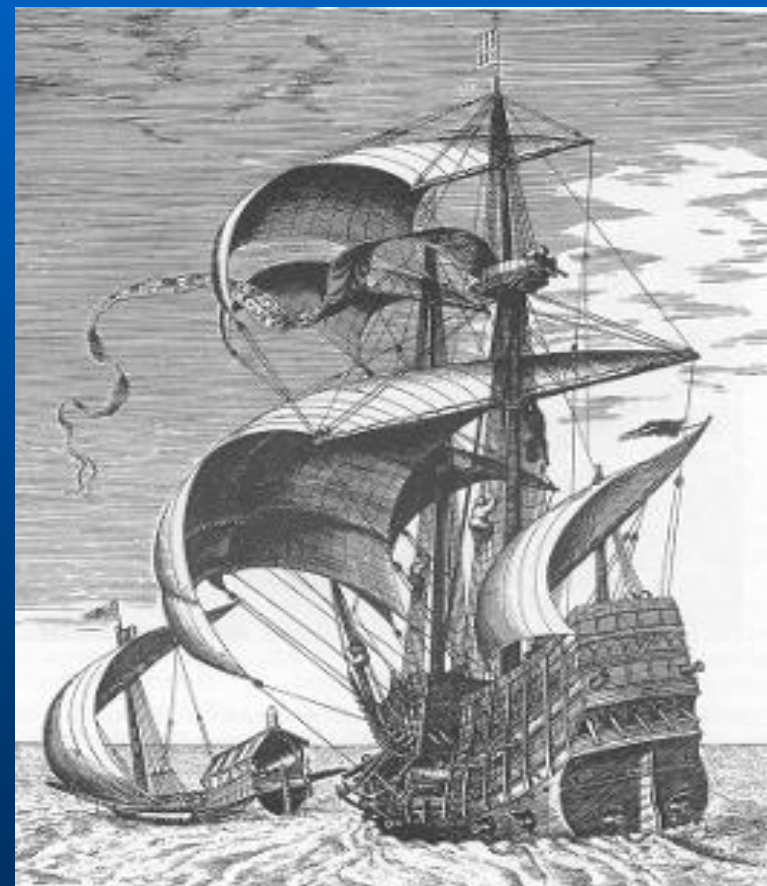
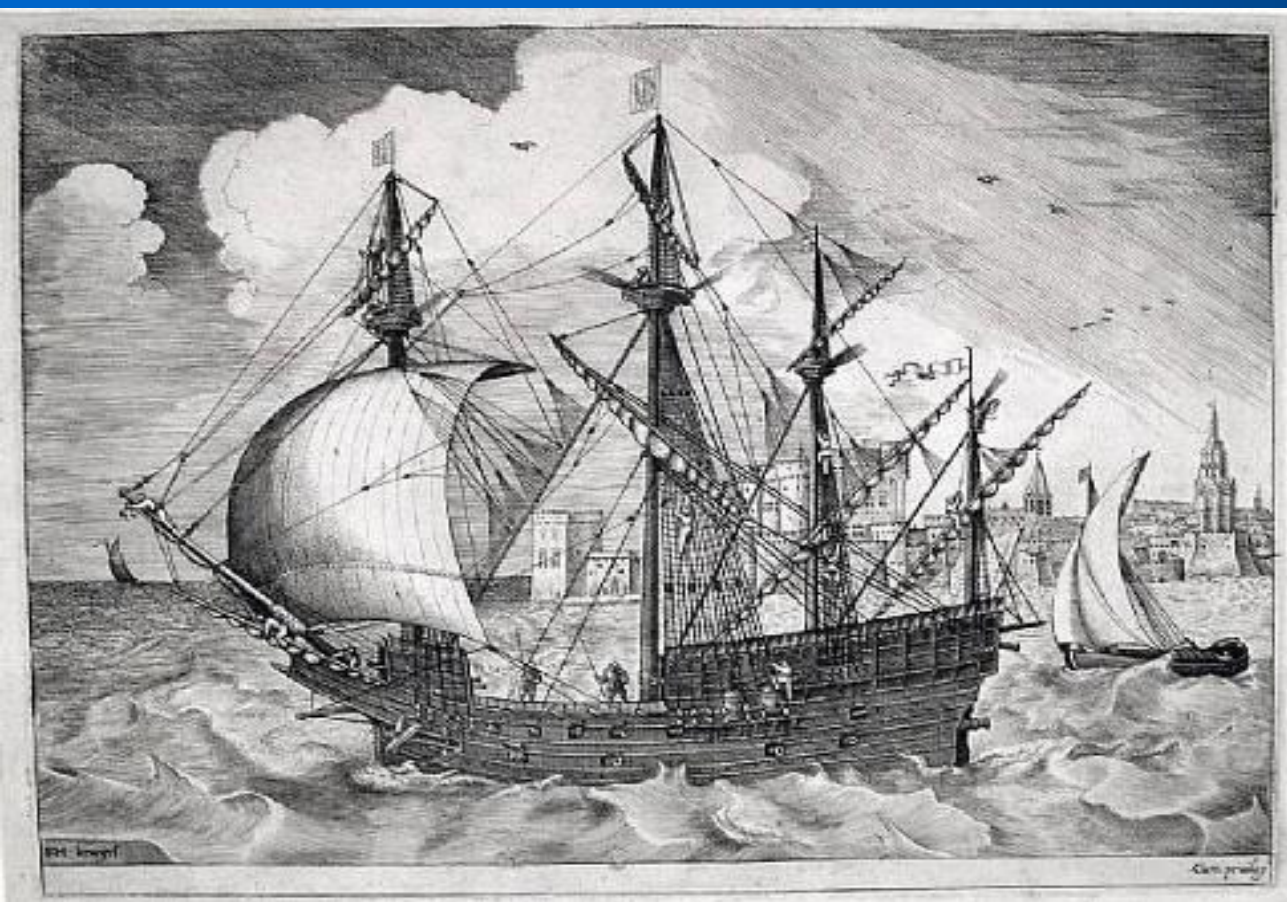


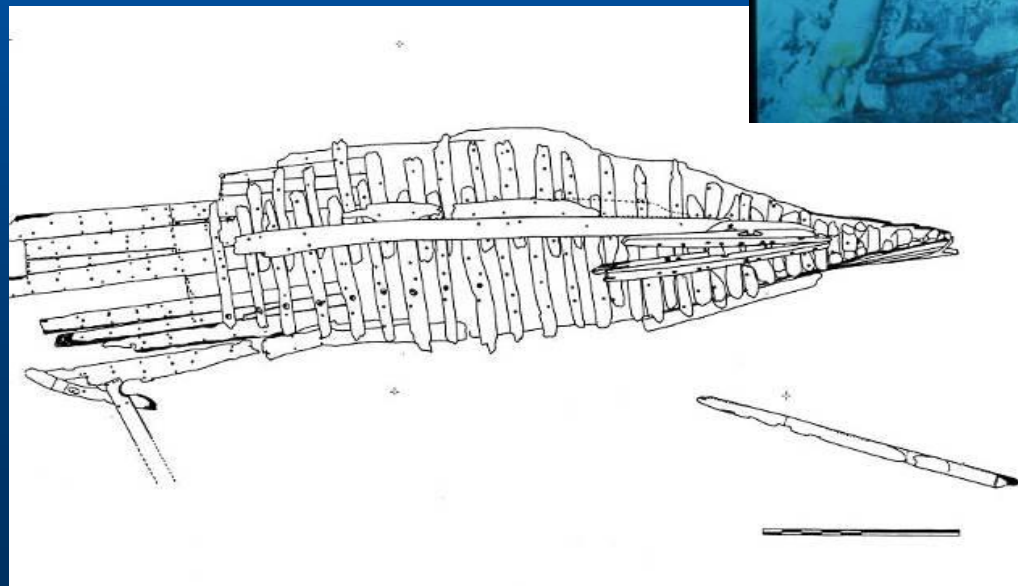
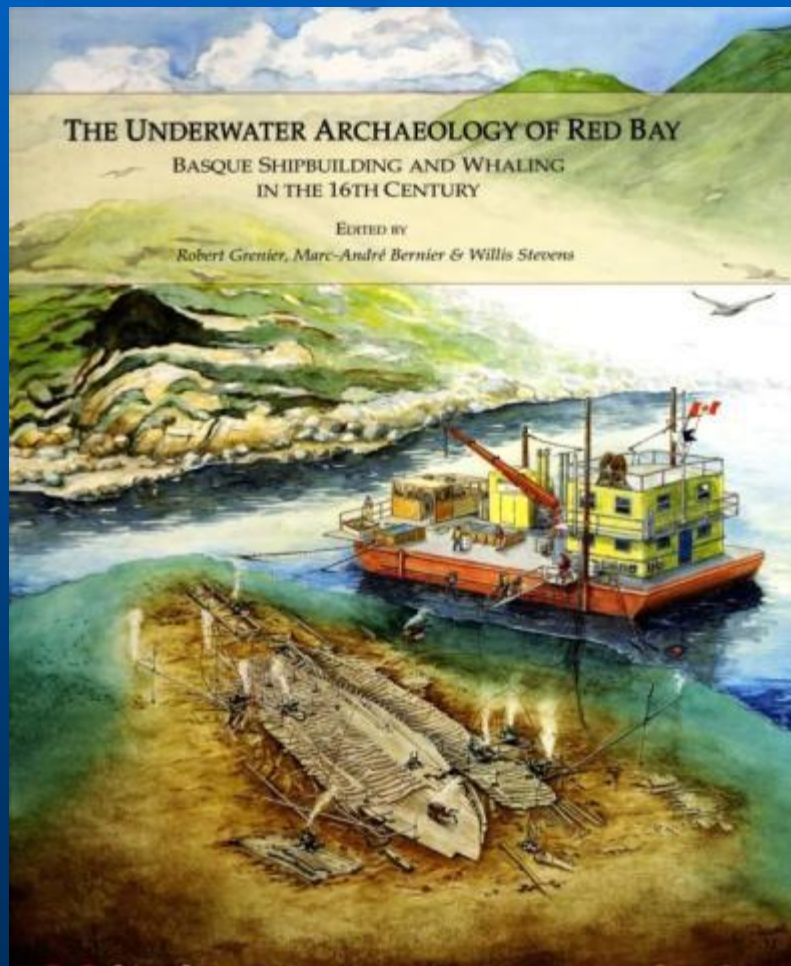
Manuel Garcia
Borrego Springs Elementary
Teacher Nga Sandhu











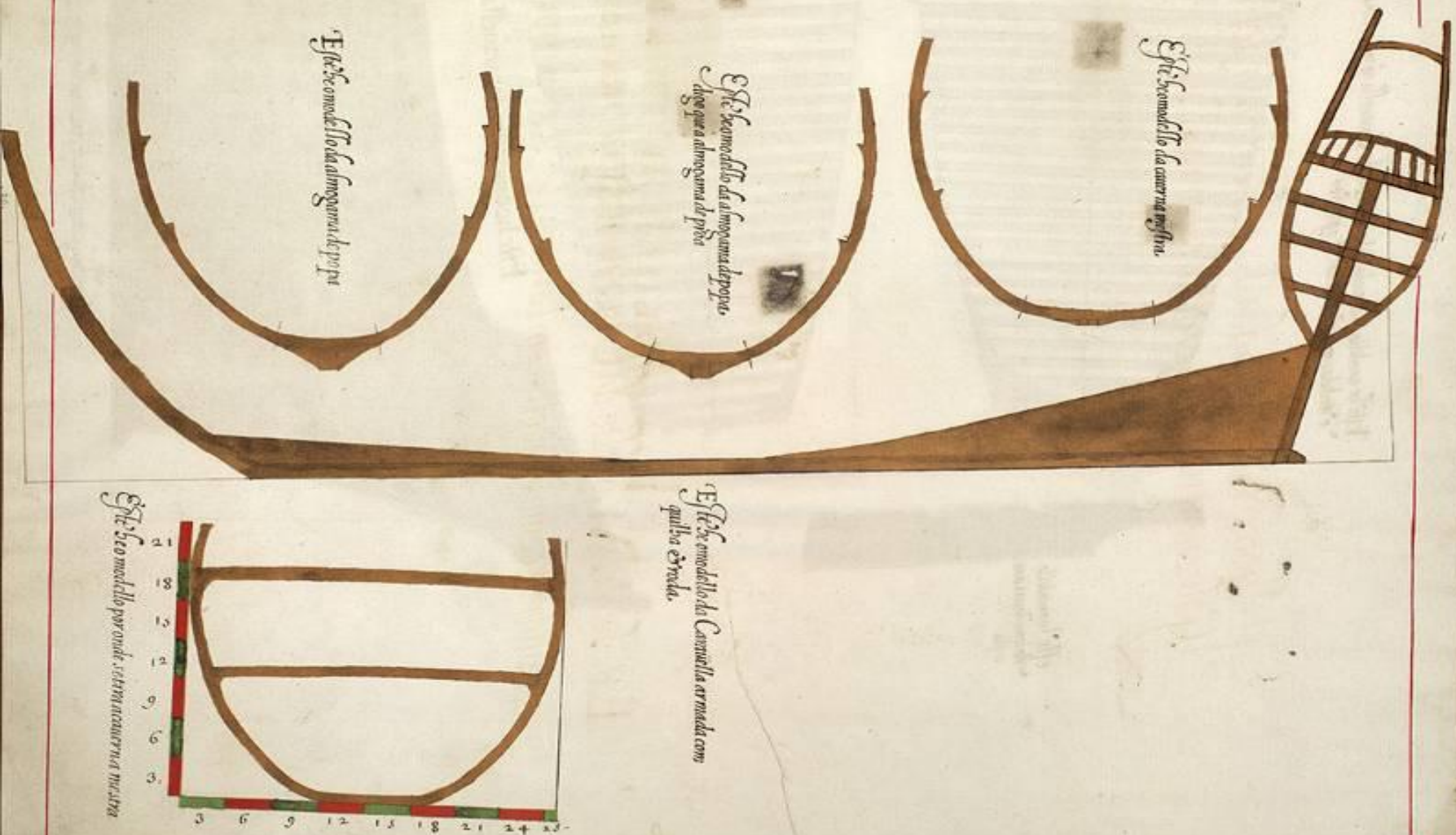
Este es modelo de la cámara principal

Este es modelo de la cámara de popa
de que a algunos de pñes

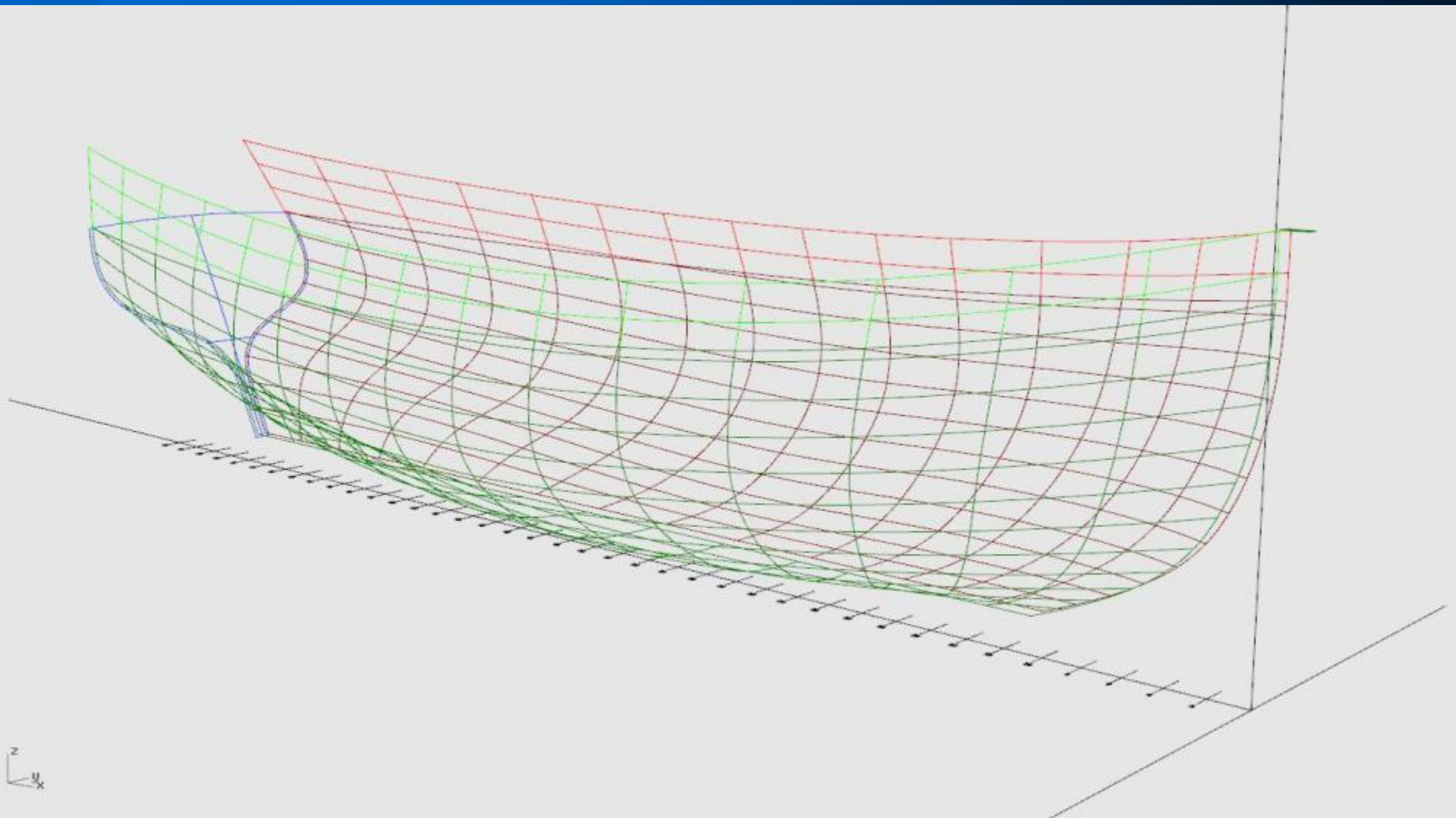
Este es modelo de la cámara de popa

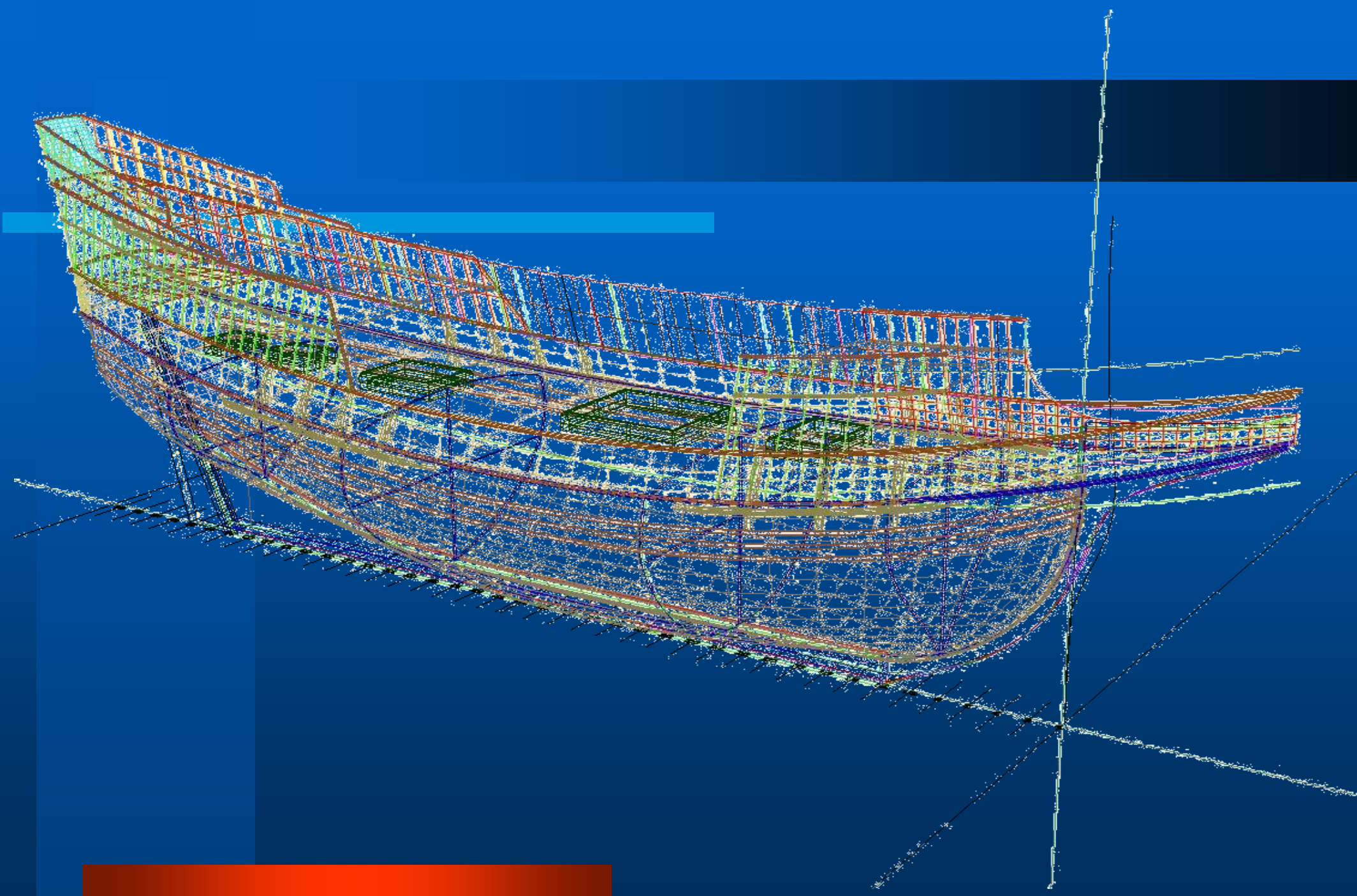
Este es modelo de la Cámara armada con
quillo y ruda.

Este es modelo por onde se muestra la cámara principal



Hull surfaces model – lines fairing – to determined dimensions

























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Project cash budget: \$6.2 million

In kind and cash contributions: \$11 million

Maritime Museum annual operating budget: \$5 million





