

Método gráfico

<p>08/03/2008 03:53:00 UTC</p> <p>Be = 10.000000 ° = 10° 0.0' Le = -2.000000 ° = -2° 0.0'</p> <p>ALMANAQUE NAUTICO - NAUTICAL ALMANAC Star Kochab GHA = 1.790946 ° = 1° 47.5' Dec = 74.114803 ° = 74° 6.9' SD = 0.000000 ' HP = 0.000000 '</p> <p>CORRECCION DE LA ALTURA - ALTITUDE CORRECTION Ref: Sea Horizon Hs = 26.0400 ° = 26° 2.4' ie = 0.0000 ' heas = 4.0000 m T = 10.0000 °C P = 1010.0000 hPa Hoi = 26.0400 ° dip = 0.0587 ° Ha = 25.9813 ° = 25° 58.9' R = 0.0332 ° OB = 0.00000000 ° HP = 0.0000 ° PA = 0.00000000 ° SD = 0.0000 ° Aug = 0.00000000 ° SDag = 0.000000 ° Ho = 25.9481 = 25° 56.9'</p> <p>DETERMINANTE DE LA RECTA DE ALTURA - Marcq St Hilaire LoP LHA = 359.790946 ° = 359° 47.5' Hc = 25.8851 ° = 25° 53.1' Z = 0.1 ° p = Ho-Hc = 0.063008 ° = 3.780474 '</p>	<p>08/03/2008 04:53:00 UTC</p> <p>Be = 10.000000 ° = 10° 0.0' Le = -2.000000 ° = -2° 0.0'</p> <p>ALMANAQUE NAUTICO - NAUTICAL ALMANAC Star Altair GHA = 301.726589 ° = 301° 43.6' Dec = 8.886089 ° = 8° 53.2' SD = 0.000000 ' HP = 0.000000 '</p> <p>CORRECCION DE LA ALTURA - ALTITUDE CORRECTION Ref: Sea Horizon Hs = 30.5550 ° = 30° 33.3' ie = 0.0000 ' heas = 4.0000 m T = 10.0000 °C P = 1010.0000 hPa Hoi = 30.5550 ° dip = 0.0587 ° Ha = 30.4963 ° = 30° 29.8' R = 0.0275 ° OB = 0.00000000 ° HP = 0.0000 ° PA = 0.00000000 ° SD = 0.0000 ° Aug = 0.00000000 ° SDag = 0.000000 ° Ho = 30.4688 = 30° 28.1'</p> <p>DETERMINANTE DE LA RECTA DE ALTURA - Marcq St Hilaire LoP LHA = 299.726589 ° = 299° 43.6' Hc = 30.6166 ° = 30° 37.0' Z = 85.5 ° p = Ho-Hc = -0.147773 ° = -8.866391 '</p>
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Fix by 2 MSH LoPs

Assumed Position
Be 10.000000 °
Le -2.000000 °

LoP at t1
Z 0.10 °
p 3.780474 °

LoP at t2
Z 85.50 °
p -8.866391 °

Rhumb line between t1 & t2
COG 303.00 °
DOG 11.6000 nm

Calculate

Assumed Position:
Be = 10.000000
Le = -2.000000

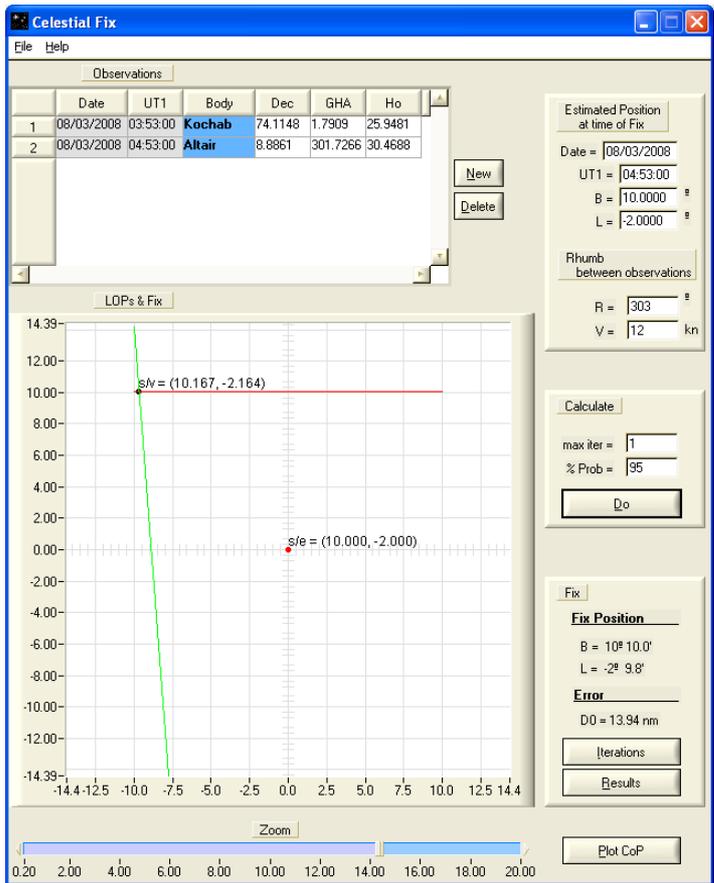
LoP at t1:
Z1 = 0.100000
p1 = 3.780474

LoP at t2:
Z2 = 85.500000
p2 = -8.866391

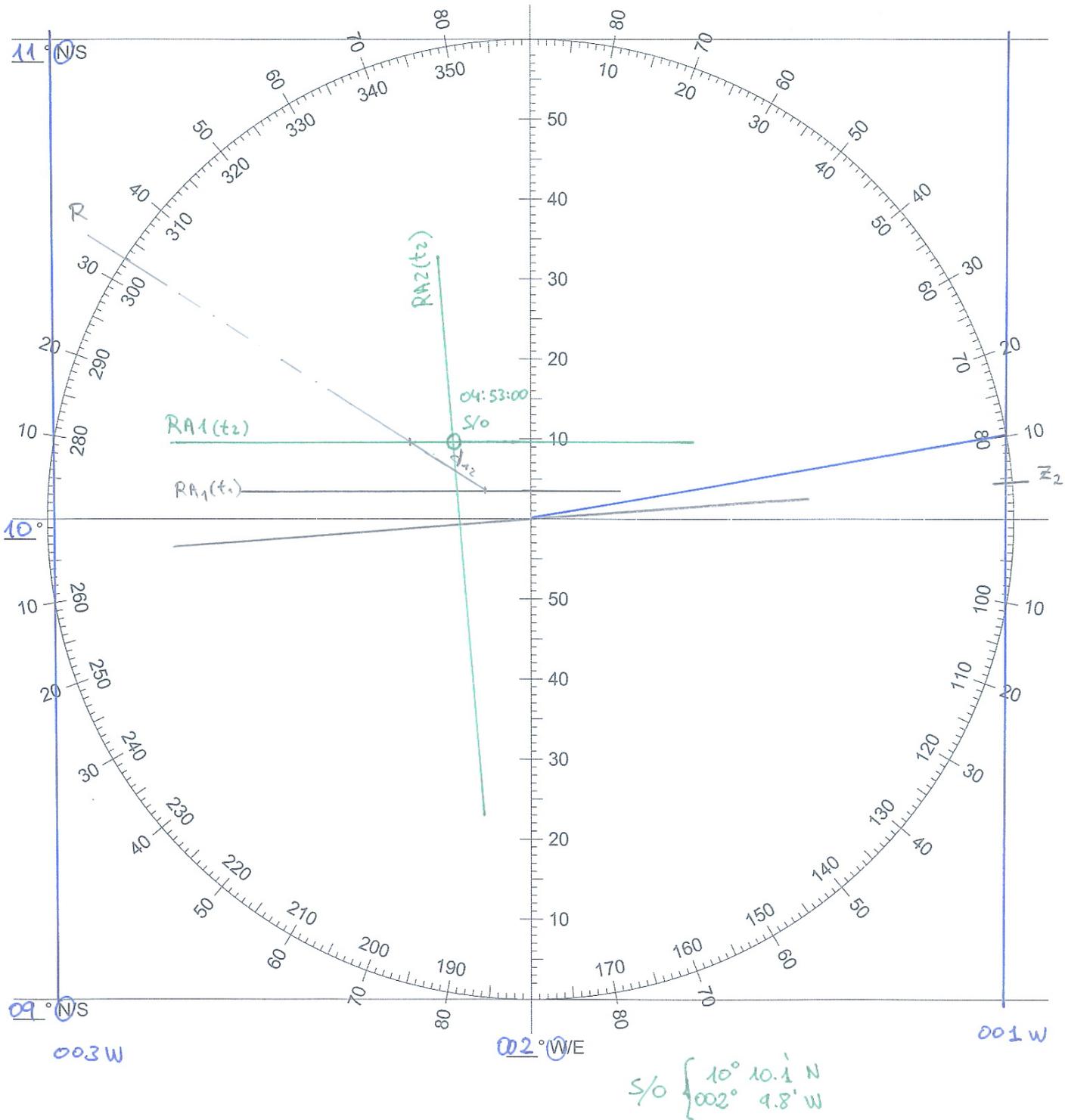
Rhumb line between t1 & t2:
R12 = 303.000000
D12 = 11.600000

Fix at t2:
B = 10.1683037118 = 10° 10.1'
L = -2.1640526221 = -2° 9.8'

New



200801cyPasaia.grafico.obs



Universal Plotting Sheet for printing on 8.5" x 11" paper
 Mark the middle lines of latitude and longitude as a whole degrees near your DR position.
 Establish additional lines of longitude by connecting the longitude scale marks on the outer ring.
 Use the minutes of latitude scale along the mid longitude to measure nautical miles.

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Método en nLS fix

<p>Fecha y hora UT1 08/03/2008 03:53:00</p> <p>SITUACION ESTIMADA Latitud: Be = 10.000000 ° = 10° 0.0' Longitud: Le = -2.000000 ° = -2° 0.0'</p> <p>ALMANAQUE NAUTICO Cuerpo celeste: Estrella Kochab Polo de iluminacion del astro: Coordenadas Ecuatoriales GHA = 1.790946 ° = 1° 47.5' Dec = 74.114803 ° = 74° 6.9' Correcciones altura: SD = 0.000000 ' HP = 0.000000 '</p> <p>CORRECCION DE LA ALTURA altura sextante [°]: Hs = 26.0400 = 26° 2.4' correccion de indice [']: ie = 0.0000 altura del ojo sobre el nivel del mar [m]: heas = 4 temperatura ambiente [°C]: T = 10.0000 presion atmosferica [mb]: P = 1010.0000 en [°]: altura observada por el sextante: Hos = 26.0400 depression del horizonte: dip = 0.0587 altura aparente: Ha = 25.9813 correccion por refraccion: R = 0.0332 correccion por achatamiento: OB = 0.0000 Paralaje horizontal: HP = 0.0000 correccion por paralaje: PA = 0.0000 semidiametro: SD = 0.0000 Aug SD = 0.0000 altura observada corregida: Ho = 25.9481 = 25° 56.9'</p> <p>DETERMINANTE DE LA RECTA DE ALTURA Angulo Horario Local: LHA = 359.790946 ° = 359° 47.5' Coordenadas Horizontales: Hc, Z Altura Calculada: Hc = 25.8851 ° = 25° 53.1' Azimut: Z = 0.1 ° p = Ho-Hc = 0.063008 ° = 3.780475 '</p>	<p>Fecha y hora UT1 08/03/2008 04:53:00</p> <p>SITUACION ESTIMADA Latitud: Be = 10.105297 ° = 10° 6.3' Longitud: Le = -2.164671 ° = -2° 9.9'</p> <p>ALMANAQUE NAUTICO Cuerpo celeste: Estrella Altair Polo de iluminacion del astro: Coordenadas Ecuatoriales GHA = 301.726589 ° = 301° 43.6' Dec = 8.886089 ° = 8° 53.2' Correcciones altura: SD = 0.000000 ' HP = 0.000000 '</p> <p>CORRECCION DE LA ALTURA altura sextante [°]: Hs = 30.5550 = 30° 33.3' correccion de indice [']: ie = 0.0000 altura del ojo sobre el nivel del mar [m]: heas = 4 temperatura ambiente [°C]: T = 10.0000 presion atmosferica [mb]: P = 1010.0000 en [°]: altura observada por el sextante: Hos = 30.5550 depression del horizonte: dip = 0.0587 altura aparente: Ha = 30.4963 correccion por refraccion: R = 0.0275 correccion por achatamiento: OB = 0.0000 Paralaje horizontal: HP = 0.0000 correccion por paralaje: PA = 0.0000 semidiametro: SD = 0.0000 Aug SD = 0.0000 altura observada corregida: Ho = 30.4688 = 30° 28.1'</p> <p>DETERMINANTE DE LA RECTA DE ALTURA Angulo Horario Local: LHA = 299.561918 ° = 299° 33.7' Coordenadas Horizontales: Hc, Z Altura Calculada: Hc = 30.4631 ° = 30° 27.8' Azimut: Z = 85.6 ° p = Ho-Hc = 0.005715 ° = 0.342879 '</p> <p>Posición estimada a la hora UT de la segunda observación: R = 303 ° d = Vf * (t2-t1) = 11.6 * 1 = 11.6 nm B1 = 10° N L2 = 002° W B2 = B1 + d cos R = 10° 6.318' N L2 = L1 + d sin R / cos Bm = 002° 9.880 W</p>
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Fix by 2 MSH LoPs

Assumed Position:
Be 10.105297 °
Le -2.164671 °

LoP at t1:
Z 0.10 °
p 3.780475 °

LoP at t2:
Z 85.60 °
p 0.342879 °

Rhumb line between t1 & t2:
COG 0.00 °
DOG 0.0000 nm

Assumed Position:
Be = 10.105297
Le = -2.164671

LoP at t1:
Z1 = 0.100000
p1 = 3.780475

LoP at t2:
Z2 = 85.600000
p2 = 0.342879

Rhumb line between t1 & t2:
R12 = 0.000000
D12 = 0.000000

Fix at t2:
B = 10.1683034707 = 10° 10.1'
L = -2.1637734439 = -2° 9.8'

Buttons: Calculate, New

Celestial Fix

File Help

Observations	Date	UT1	Body	Dec	GHA	Ho
1	08/03/2008	03:53:00	Kochab	74.1148	1.7909	25.9481
2	08/03/2008	04:53:00	Altair	8.8861	301.7266	30.4688

Buttons: New, Delete

Estimated Position at time of Fix:
Date = 08/03/2008
UT1 = 04:53:00
B = 10.1053 °
L = -2.1647 °

Rhumb between observations:
R = 303 °
V = 12 kt

Calculate
max iter = 1
% Prob = 95
Do

Fix
Fix Position
B = 10° 10.1'
L = -2° 9.8'

Error
DO = 3.78 nm
Iterations
Results

Plot CoP

Zoom

200801cyPasaia.obs

Latitud por altura meridiana

Al observar Kochab:

UT = 03:53:00

LHA = 359° 47.5'

Z = 0.1 °

Por lo tanto se puede considerar que está en el meridiano superior del lugar, cara al norte, luego:

$B = Dec - dz = Dec - (90^\circ - Ho)$

$B = 74.1148 - 90 + 25.9481 = 10.0629$

Con lo cual, la latitud a la hora de la observación de Altair es:

$R = 303^\circ$

$d = Vf * (t2-t1) = 11.6 * 1 = 11.6 \text{ nm}$

$B1 = 10.0629$

$B2 = B1 + d \cos R = 10.16819688 = 10^\circ 10.092' \text{ N}$

Longitud – Time sight

08/03/2008

04:53:00 UT1

$B = 10.168197 = 10^\circ 10.1'$

Altitude

$H_s = 30.555000$

$H_o = 30.468827$

Geocentric equatorial coordinates

Body: Altair

Dec = 8.886089

GHA = 301.726589

Time sight

LHA = 299.562813

$L = -2.163776 = -2^\circ 9.8'$

