

$$k := 10^3; \quad 1000 \quad (1)$$

$$Rearth := 6380 \cdot k + 308; \quad 6380308 \quad (2)$$

$$Rs := 20200 \cdot k + Rearth; \quad \pi := 3.14159265358979; \quad 3.14159265358979 \quad (3)$$

$$Lons1 := \frac{-62.3256 \cdot \pi}{180}; \quad -1.087786928 \quad (4)$$

$$Lons2 := \frac{-85.2234 \cdot \pi}{180}; \quad -1.487428930 \quad (5)$$

$$Lons3 := \frac{-92.8388 \cdot \pi}{180}; \quad -1.620342734 \quad (6)$$

$$Lats1 := \frac{7.8520 \cdot \pi}{180}; \quad 0.1370432529 \quad (7)$$

$$Lats2 := \frac{45.1053 \cdot \pi}{180}; \quad 0.7872359952 \quad (8)$$

$$Lats3 := \frac{29.7834 \cdot \pi}{180}; \quad 0.5198183924 \quad (9)$$

$$c := 299860 \cdot k; \quad 299860000 \quad (10)$$

$$PR1 := 0; \quad 0 \quad (11)$$

$$PR2 := -0.003817986 \cdot c; \quad -1.144861282 \cdot 10^6 \quad (12)$$

$$PR3 := -0.004077077 \cdot c; \quad -1.222552309 \cdot 10^6 \quad (13)$$

$$Xs1 := Rs \cdot \cos(Lons1) \cdot \cos(Lats1); \quad 1.222938371 \cdot 10^7 \quad (14)$$

$$Xs2 := Rs \cdot \cos(Lons2) \cdot \cos(Lats2); \quad 1.562206497 \cdot 10^6 \quad (15)$$

$$Xs3 := Rs \cdot \cos(Lons3) \cdot \cos(Lats3); \quad -1.142533303 \cdot 10^6 \quad (16)$$

$$Ys1 := Rs \cdot \sin(Lons1) \cdot \cos(Lats1); \quad -2.331885277 \cdot 10^7 \quad (17)$$

$$Ys2 := Rs \cdot \sin(Lons2) \cdot \cos(Lats2); \quad -1.869538576 \cdot 10^7 \quad (18)$$

$$Ys3 := Rs \cdot \sin(Lons3) \cdot \cos(Lats3); \quad -2.304098923 \cdot 10^7 \quad (19)$$

$$Zs1 := Rs \cdot \sin(Lats1); \quad (20)$$

$$Zs2 := Rs \cdot \sin(Lats2); \quad 3.631260556 \cdot 10^6 \quad (20)$$

$$Zs3 := Rs \cdot \sin(Lats3); \quad 1.882962653 \cdot 10^7 \quad (21)$$

$$Xe := Rearth \cdot \cos(Lone) \cdot \cos(Late); \quad 6380308 \cos(Lone) \cos(Late) \quad (22)$$

$$Ye := Rearth \cdot \sin(Lone) \cdot \cos(Late); \quad 6380308 \sin(Lone) \cos(Late) \quad (23)$$

$$Ze := Rearth \cdot \sin(Late); \quad 6380308 \sin(Late) \quad (24)$$

$$f1 := - (PR1 - c \cdot \tau)^2 + (Xs1 - Xe)^2 + (Ys1 - Ye)^2 + (Zs1 - Ze)^2; \\ -89916019600000000 \tau^2 + \left(1.222938371 \cdot 10^7 - 6380308 \cos(Lone) \cos(Late) \right)^2 \\ + \left(-2.331885277 \cdot 10^7 - 6380308 \sin(Lone) \cos(Late) \right)^2 \\ + \left(3.631260556 \cdot 10^6 - 6380308 \sin(Late) \right)^2 \quad (25)$$

$$f2 := - (PR2 - c \cdot \tau)^2 + (Xs2 - Xe)^2 + (Ys2 - Ye)^2 + (Zs2 - Ze)^2; \\ - \left(-1.144861282 \cdot 10^6 - 299860000 \tau \right)^2 + \left(1.562206497 \cdot 10^6 - 6380308 \cos(Lone) \cos(Late) \right)^2 \\ + \left(-1.869538576 \cdot 10^7 - 6380308 \sin(Lone) \cos(Late) \right)^2 \\ + \left(1.882962653 \cdot 10^7 - 6380308 \sin(Late) \right)^2 \quad (26)$$

$$f3 := - (PR3 - c \cdot \tau)^2 + (Xs3 - Xe)^2 + (Ys3 - Ye)^2 + (Zs3 - Ze)^2; \\ - \left(-1.222552309 \cdot 10^6 - 299860000 \tau \right)^2 \\ + \left(-1.142533303 \cdot 10^6 - 6380308 \cos(Lone) \cos(Late) \right)^2 \\ + \left(-2.304098923 \cdot 10^7 - 6380308 \sin(Lone) \cos(Late) \right)^2 \\ + \left(1.320303776 \cdot 10^7 - 6380308 \sin(Late) \right)^2 \quad (27)$$

$$\text{solve}(\{f1, f2, f3\}, \{Lone, Late, \tau\}) \\ \{Late = -.6234490039, Lone = 1.494307093, \tau = 0.1057464540\}, \\ \{Late = 0.5894242338, \tau = -0.07172828348, Lone = -1.472872697\}, \\ \{\tau = 0.06841130937, Lone = -.9413204606, Late = 0.3733598620\}, \\ \{Late = -.2963846746, \tau = -.1091068699, Lone = 2.324680685\}, \\ \{\tau = 0.1057464540, Late = -2.518143650, Lone = -1.647285560\}, \\ \{\tau = -0.07172828348, Lone = 1.668719957, Late = 2.552168420\}, \\ \{\tau = 0.06841130937, Lone = 2.200272193, Late = 2.768232792\}, \\ \{\tau = -.1091068699, Late = -2.845207979, Lone = -.8169119683\} \quad (28)$$