Problem 1.)a.)
2.6 au <= a_m <= 3.1 au

Problem 1.)b.)
a_m = 3.07165 au

c = 6.0866 au
s = 6.1433 au

alpha_m = 3.14159 rad
beta_m = 0.192441 rad

t_m = 16.9061 ctu = 2.69082 years

alpha_0 = 1.8015 rad
beta_0 = 0.150743 rad
alpha = 1.8015 rad
alpha# = 4.48169 rad
beta = 0.150743 rad

t_F = 9.25084 ctu = 1.47239 years
t_F* = 60.9846 ctu = 9.70647 years

t_p = 7.17151 ctu = 1.14144 years

Problem 1.)c.)
r_1 [au]:
    1     0

r_2 [au]:
  -4.5033    2.6000

u_1:
    1     0

u_c:
  -0.9042    0.4272

A = 0.177171 EMOS
A# = -0.177171 EMOS
B = 2.9611 EMOS

v_1 [EMOS]:
  -0.0536    1.3406

v_1# [EMOS]:
   0.6211    1.1892

Problem 1.)d.)
|v_1| = 1.34164 EMOS
|v_1#| = 1.34164 EMOS

Problem 1.)e.)
p = 1.79713 au
p~ = 1.41421 au

e = 0.800359
e~ = 0.846852

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