In [1]:
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from vpython import *
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In [2]:
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scene_autoscale = False
scene = display(width = 1000, height = 1000, center = vector(0,0,0))
sphere(pos = vector(0,0,0), texture = "https://i.imgur.com/1nVWbbd.jpeg", radius = 5000
Trappist1a = sphere(pos = vector(0,0,0),radius=13.21,color = color.red) # creates spher
Trappist1b = sphere(pos = vector(-282.94,-10,0),radius = 1.12, color = color.orange, ma
Trappist1b_V = vector(0,0,4) #Velocity
Trappist1c = sphere(pos = vector(-383.798,-10,0),radius = 1.1, color = color.yellow, ma
Trappist1c_V = vector(0,0,3.5)
Trappist1d = sphere(pos = vector(-536.25,-10,0),radius = 0.78, color = color.green, mak
Trappist1d_V = vector(0,0,3)
Trappist1e = sphere(pos = vector(-700.43,-10,0),radius = 0.91, color = color.blue, make
Trappist1e_V = vector(0,0,2.6)
Trappist1f = sphere(pos = vector(-916.22,-10,0),radius = 1.05, color = color.purple, ma
Trappist1f_V = vector(0,0,2.3)
Trappist1g = sphere(pos = vector(-1113.23,-10,0),radius = 1.15, color = color.magenta,
Trappist1g_V = vector(0,0,2.13)
Trappist1h = sphere(pos = vector(-1465.06,-10,0),radius = 0.77, color = color.red, make
Trappist1h_V = vector(0,0,1.86)

for i in range(5000):
    rate(151) #rate at which the planet moves
    Trappist1b.pos+=Trappist1b_V
    d = (Trappist1b.pos.x**2 + Trappist1b.pos.y**2 + Trappist1b.pos.z**2)**0.5 #orbit r
    radial_vector = (Trappist1b.pos - Trappist1a.pos)/d
    Gravity = (-9420*radial_vector)/(d**2) #add gravity as a vector
    Trappist1b_V+=Gravity #add gravity to the velocity
    Trappist1b.pos+=Trappist1b_V #finalize all additions

    rate(242)
    Trappist1c.pos+=Trappist1c_V
    d = (Trappist1c.pos.x**2 + Trappist1c.pos.y**2 + Trappist1c.pos.z**2)**0.5
    radial_vector = (Trappist1c.pos - Trappist1a.pos)/d
    Gravity = (-9420*radial_vector)/(d**2)
    Trappist1c_V+=Gravity
    Trappist1c.pos+=Trappist1c_V

    rate(405)
    Trappist1d.pos+=Trappist1d_V
    d=(Trappist1d.pos.x**2+Trappist1d.pos.y**2 + Trappist1d.pos.z**2)**0.5
    radial_vector = (Trappist1d.pos - Trappist1a.pos)/d
    Gravity = (-9420*radial_vector)/(d**2)
    Trappist1d_V+=Gravity
    Trappist1d.pos+=Trappist1d_V

    rate(610)
    Trappist1e.pos+=Trappist1e_V
    d = (Trappist1e.pos.x**2 + Trappist1e.pos.y**2 + Trappist1e.pos.z**2)**0.5
    radial_vector = (Trappist1e.pos - Trappist1a.pos)/d
    Gravity = (-9420*radial_vector)/(d**2)
    Trappist1e_V+=Gravity
    Trappist1e.pos+=Trappist1e_V

    rate(921)
    Trappist1f.pos+=Trappist1f_V
    d = (Trappist1f.pos.x**2+Trappist1f.pos.y**2 + Trappist1f.pos.z**2)**0.5
    radial_vector = (Trappist1f.pos - Trappist1a.pos)/d
    Gravity = (-9420*radial_vector)/(d**2)
    Trappist1f_V+=Gravity
    Trappist1f.pos+=Trappist1f_V
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    rate(1236)
    Trappist1g.pos+=Trappist1g_V
    d = (Trappist1g.pos.x**2 + Trappist1g.pos.y**2 + Trappist1g.pos.z**2)**0.5
    radial_vector = (Trappist1g.pos-Trappist1a.pos)/d
    Gravity = (-9420*radial_vector)/(d**2)
    Trappist1g_V+=Gravity
    Trappist1g.pos+=Trappist1g_V

    rate(1876)
    Trappist1h.pos+=Trappist1h_V
    d = (Trappist1h.pos.x**2 + Trappist1h.pos.y**2 + Trappist1h.pos.z**2)**0.5
    radial_vector = (Trappist1h.pos - Trappist1a.pos)/d
    Gravity = (-9420*radial_vector)/(d**2)
    Trappist1h_V+=Gravity
    Trappist1h.pos+=Trappist1h_V
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In [ ]: