$$
\begin{aligned}
\frac{\mathrm{d}c_1}{\mathrm{d}t} =& -\left(9.21P + 20.95\cos\left(S\right) + 2.49\exp\frac{1}{T}\right)c_1 + (0.21P + 0.15\cos\left(S\right))c_2 \\
&+ \left(4.31P + 22.57\cos\left(S\right) + 12.42\exp\frac{1}{T}\right)c_5 + 0.66\cos\left(S\right)c_4 - 2.73\exp\frac{1}{T}c_1 \\
&- 4.04c_1^2Pc_2 - 32.70Pc_1c_2c_3 - 9.32Pc_1c_2c_6 - 0.41Pc_1c_4c_6 + 28.07\cos\left(S\right)c_2c_3c_6 \\
&- 0.25c_1^3\exp\frac{1}{T} + E_1 \\
\frac{\mathrm{d}c_2}{\mathrm{d}t} =& -(0.21P + 0.15\cos\left(S\right))c_2 - 6.50Pc_2 - (0.53P + 2.13\cos\left(S\right))c_2 - 0.70\cos\left(S\right)c_2 \\
&- 7.02\cos\left(S\right)c_2c_3 - 1.87\cos\left(S\right)c_2c_4 - 12.19\cos\left(S\right)c_2c_6 - 2.02c_1^2Pc_2 \\
&- 32.70Pc_1c_2c_3 - 9.32Pc_1c_2c_6 - 4.22c_2^2Pc_3 - 36.40Pc_2c_3c_5 \\
&- (9.17P + 12.25\cos\left(S\right))c_2c_4c_6 - 60.93\cos\left(S\right)c_2c_3c_6 + E_2 \\
\frac{\mathrm{d}c_3}{\mathrm{d}t} =& 2.20\exp\frac{1}{T}c_4 - 7.02\cos\left(S\right)c_2c_3 + 1.87\cos\left(S\right)c_2c_4 - 32.70Pc_1c_2c_3 \\
&+ 0.41Pc_1c_4c_6 - 2.11c_2^2Pc_3 - 36.40Pc_2c_3c_5 + (9.17P + 12.25\cos\left(S\right))c_2c_4c_6 \\
&- 60.93\cos\left(S\right)c_2c_3c_6 - 0.04c_3^3\cos\left(S\right) + E_3 \\
\frac{\mathrm{d}c_4}{\mathrm{d}t} =& 1.37Pc_2 - 0.66\cos\left(S\right)c_4 + 2.40\cos\left(S\right)c_5 + 0.32\cos\left(S\right)c_6 - 5.12\exp\frac{1}{T}c_4 \\
&+ 5.40\cos\left(S\right)c_2c_3 - 1.87\cos\left(S\right)c_2c_4 + 12.19\cos\left(S\right)c_2c_6 + 29.89Pc_1c_2c_3 \\
&- 0.41Pc_1c_4c_6 + 2.11c_2^2Pc_3 + 24.00Pc_2c_3c_5 - (9.17P + 12.25\cos\left(S\right))c_2c_4c_6 \\
&+ 32.86\cos\left(S\right)c_2c_3c_6 + E_4 \\
\frac{\mathrm{d}c_5}{\mathrm{d}t} =& \left(9.21P + 20.95\cos\left(S\right) + 2.49\exp\frac{1}{T}\right)c_1 + (0.53P + 2.13\cos\left(S\right))c_2 \\
&- \left(4.31P + 22.57\cos\left(S\right) + 12.42\exp\frac{1}{T}\right)c_5 - 2.40\cos\left(S\right)c_5 + 2.93\exp\frac{1}{T}c_4 \\
&+ 9.32Pc_1c_2c_6 - 36.40Pc_2c_3c_5 + E_5 \\
\frac{\mathrm{d}c_6}{\mathrm{d}t} =& 0.70\cos\left(S\right)c_2 - 0.32\cos\left(S\right)c_6 + 2.73\exp\frac{1}{T}c_1 + 1.62\cos\left(S\right)c_2c_3 \\
&- 12.19\cos\left(S\right)c_2c_6 + 2.02c_1^2Pc_2 + 2.82Pc_1c_2c_3 - 9.32Pc_1c_2c_6 \\
&- 0.41Pc_1c_4c_6 + 12.40Pc_2c_3c_5 - (9.17P + 12.25\cos\left(S\right))c_2c_4c_6 \\
&- 60.93\cos\left(S\right)c_2c_3c_6 + 0.01c_3^3\cos\left(S\right) + 0.08c_1^3\exp\frac{1}{T} + E_6
\end{aligned}
$$