Gluck on the Hopf Fibration

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4:10 PM

$y_1 = 2(x_1x_3 + x_2x_4) \quad y_2 = 2(x_2x_3 - x_1x_4)$
$y_3 = x_2^2 + x_1^2 - x_3^2 - x_4^2$

$$\begin{array}{ccc} S^3 & \xrightarrow{\pi} & S^2 \\ \uparrow & & \uparrow \\ \mathbb{R}^4_x & & \mathbb{R}^3_y \end{array}$$

Also, the circles are the intersections of $S^3 \subset \mathbb{C}^2$ with the complex lines.

Wouldn't it be nice to make a picture of the Hopf Fibration, coloured by a political map of earth on S^2?