In this talk, I will present some first results on the geometry of the flag manifold $F$ as twistor space of the complex projective plane. Firstly, I will present some general facts on low-degree curves and surfaces in the flag manifold. Afterward, I will introduce the twistor fibration associated with the standard Hermitian metric in $\mathbb{C}P^2$ and describe the set of twistor fibers. In the second part, I will give a description of the family of automorphisms of $F$ that come from unitary automorphisms of $\mathbb{C}P^2$ and I will show a classification result for a family of algebraic surfaces in $F$, up to such transformations. For a special sub-family of these surfaces, namely those which are $j$-invariant, I will give a deeper geometric description.