The stereochemical phenomenon that arises from hindered rotation around bonds in nonplanar molecules is termed the atropoisomerism. During our previous work we noted the presence of this kind of isomerism in 1-aryl-4-ferrocenyl-3-phenyltetrahydropyrimidin-2(1*H*)-ones obtained from *ortho*-substituted 3-(arylamino)-1-ferrocenylpropan-1-ols. Inspired by an interesting biological/medical features of six-membered cyclic ureas and characteristic of "atropoisomers - things that rotate", herein we present an easy performable synthesis and full characterisation of novel atropoisomeric ferrocene-containing six-membered cyclic ureas. In addition, we successfully determined the crystal structure of two atropoisomers for the same compound. Molecular structural properties and intermolecular interactions of these two structures have been compared and analyzed in detail. Interesting, it has been found that these two isomers although quite similar in conformation and geometrical parameters, form very different crystal packing.