SKEWB STAR

Special challenge/competition
24 October 2018

Question 1:

How many solutions are there to this puzzle?--in other words, in how many different ways is it possible to <u>physically</u> orientate a solved octahedron and a solved cube/skewb in relation to each other?

Question 2:

How many color-matchings (please see definition below) are there <u>in total</u>, in other words what is the sum of all the various color-matching values for all the various solutions?
A "color-matching" is an instance of one of the sides of an octahedron-pyramid having the same color as the side of the cube/skewb under the pyramid (in a solved Skewb Star, obviously)

Before proceeding: just to be absolutely clear, the competition relates to a standard Skewb Star with a 6-color cube/skewb combined with an 8-color octahedron where all six of the colors on the cube are also to be found on the octahedron

As far as I can tell there is nothing anywhere about there being multiple solutions to this puzzle, let alone about what properties these solutions might have, <u>so the whole problem is unknown and brand new</u>; of course I can´t be absolutely sure that there isn´t something somewhere about this, but if there is I certainly don´t know about it.

The first five correct*** entries will each receive a set of each of the three models of my own cube, the Kaostikon, which can be found at www.speedcube.se
PLUS: the submitters of the entries will be immortalized!!
Please send entries to petertchamitch@hotmail.com
(Also: a fairly in-depth presentation of my own cube, the Kaostikon, can be found elsewhere on this website www.petertchamitch.se)

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I´m completely certain about the solutions that I´ve found, and virtually certain that I´ve found all the solutions that are possible--should anyone come up with some new ones I would be extremely interested in that discovery!

Finally, it is interesting to observe that if one rearranges the colors on the octahedron, the answer to Question 2 remains the same (and Question 1, obviously) even though the individual color-matching values for the individual solutions are completely different (i.e. not just the old values rearranged)--if anyone can come up with counter-examples I would be extremely interested in that discovery also!