Problem 29
The Feuerbach Point is the Homothetic Center of the Inner Yff Triangle and the Triangle of the Centers of the Orthocentroidal Circles of the Triangulation Triangles of the Orthocenter

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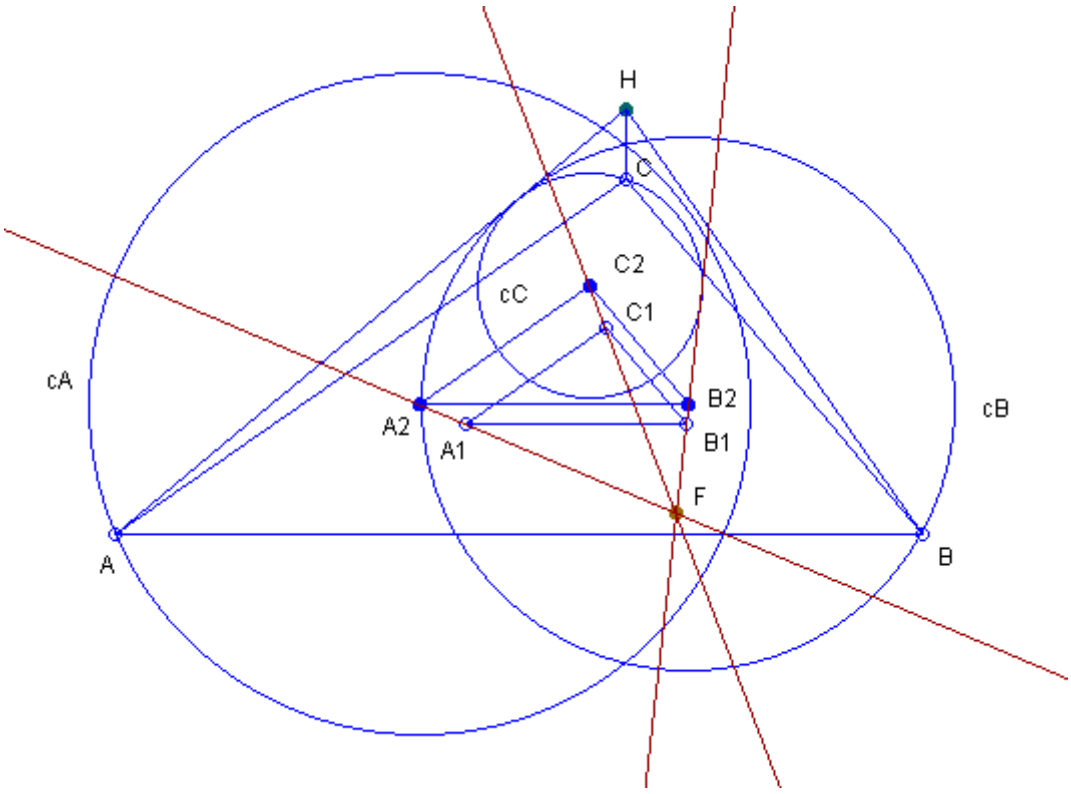
Prove the following computer-generated theorem:

THEOREM. The Feuerbach Point is the Homothetic Center of the Inner Yff Triangle and the Triangle of the Centers of the Orthocentroidal Circles of the Triangulation Triangles of the Orthocenter.

The reader may find the definitions in [1-4].

See the Figure:



$A_1B_1C_1$ - Inner Yff Triangle;

H - Orthocenter;
cA - Orthocentroidal Circle of triangle BCH;
cB - Orthocentroidal Circle of triangle CAH;
cC - Orthocentroidal Circle of triangle ABH;
A_2 - Center of the Orthocentroidal Circle of triangle BCH;
B_2 - Center of the Orthocentroidal Circle of triangle CAH;
C_2 - Center of the Orthocentroidal Circle of triangle ABH;
$A_2B_2C_2$ - Triangle of the Centers of the Orthocentroidal Circles of the Triangulation Triangles of the Orthocenter;
The Feuerbach Point F is the Homothetic Center of the Inner Yff Triangle and the Triangle of the Centers of the Orthocentroidal Circles of the Triangulation Triangles of the Orthocenter.

References

1. Quim Castellsaguer, The Triangles Web, http://www.xtec.es/~qcastell/ttw/ttweng/portada.html
2. D. Dekov, Computer-Generated Encyclopedia of Euclidean Geometry, First Edition, 2006, available at the Web: http://www.dekovsoft.com/e1/.
3. D. Dekov, papers in this journal, 2006, 2007, 2008.
4. Eric W. Weisstein, MathWorld - A Wolfram Web Resource. http://mathworld.wolfram.com/