A THEOREM ON SPHERICAL QUADRILATERALS AND SPHERICAL CONICS

By

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A Theorem on Spherical Quadrilaterals and Spherical Conics.

By Sir William R. Hamilton.

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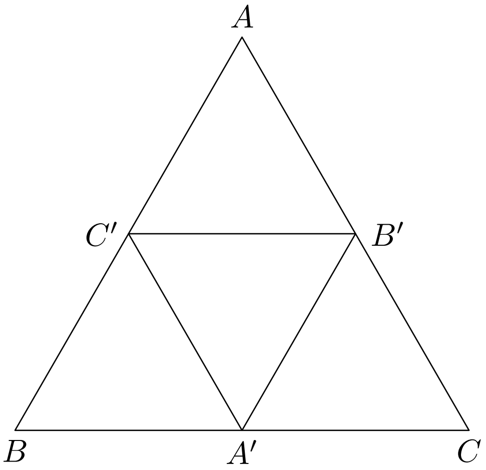
The following notice, by the President, Sir William R. Hamilton, of a theorem derived from his Researches on Quaternions, was read.



Let AC′A′B′ be called a *spherical parallelogram*, if A′, B′, C′ bisect the sides BC, CA, AB of a spherical triangle ABC; and let it be said that the corner A of the triangle is the point which *completes the parallelogram* when A′B′ and A′C′ are given as two adjacent sides thereof.

Take any spherical quadrilateral, KLMN, and any point on the same spheric surface, P; draw the four arcs PK, PL, PM, PN, and complete, in four points, K′, L′, M′, N′, the four spherical parallelograms, of which the given pairs of adjacent sides are PK, PL; PL, PM; PM, PN; PN, PK. Then the four new points, K′, L′, M′, N′, form a new spherical quadrilateral, such that its four sides K′L′, L′M′, M′N′, N′K′, touch a certain spherical conic, having the poles of the diagonals KM, LN of the old quadrilateral for its foci.

This theorem was stated to follow as an easy corollary from what Sir William Hamilton had already communicated to the Academy respecting quaternions.