

**A THEOREM ON SPHERICAL QUADRILATERALS
AND SPHERICAL CONICS**

By

William Rowan Hamilton

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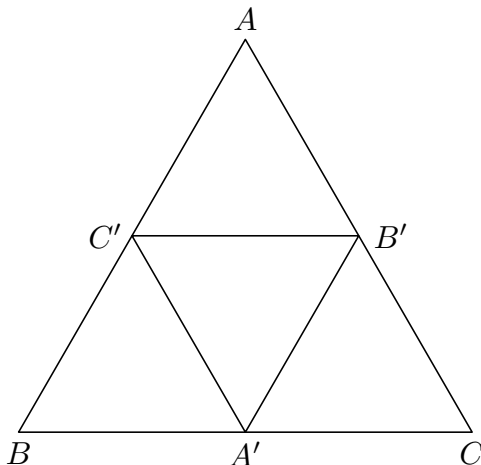
A Theorem on Spherical Quadrilaterals and Spherical Conics.

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.