

Affections of Spherical Triangles.

If any Spherical Triangle have two Sides equal to
 lesser } then } a Semicircle,
 greater }

the two angles at the Base or third Side will be

equal to }
 lesser } then } two right Angles.
 greater }

In every right angled Spherical Triangle having no Quadrantal Side, the angle Opposite to that Side that is less than a Quadrant is Acute, and greater than the said Side;

But that angle which is Opposite to the Side, that is greater than a Quadrant, is Obtuse; and less than the said Side.

In every right angled Spherical Triangle all the three angles are less than 4 right angles, that is the two Oblique angles are less than 3 right angles, or 270° .

In a right angled equicrural Triangle, if the two equal angles be Acute, either of them will be greater than 45° , but if Obtuse less than 135° .

In every right angled Spherical Triangle either of the Oblique angles is greater than the Complement of the other, but less than the difference of the same Complement from a Semicircle.

Two angles of any Spherical Triangle are greater than the difference between the third angle and a Semicircle, and therefore any side being continued, the outward angle is less than the two inward opposite angles.

The sum of the three Angles of a Spherical Triangle is greater than two right angles, but less than 6.

In Spherical Triangles, that angle which of all the rest is nearest in quantity to a Quadrant, and the side subtending it are doubtful, Whether they be of the same, or of a different affection, unless fore-known, or found by Calculation;

But the other two more Oblique angles are each of them of the same kind as their Opposite Sides, which Mr *Norwood* thus propounds, *Two Angles of a Spherical Triangle, shall be of the same affection as their Opposite Sides*, and to this purpose,

If any Side of a Triangle be nearer to a Quadrant than its opposite Angle, two Angles of that Triangle (not universally any two) shall

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shall be of the same kind, and the third greater than a Quadrant.

But if any Angle of a Triangle be nearer to a Quadrant than its opposite side, two Sides of that Triangle (not universally any two) shall be of the same kind, and the third less than a Quadrant.

In any Spherical Triangle, if one of the angles be subtracted from a Semicircle, and the residue so found subtracted from a Whole Circle, the Ark found by this latter Subtraction, will be greater than the Sum of the other two Angles.

In every Spherical Triangle the difference between the sum of two angles howsoever taken, and a whole Circle or 4 right angles is greater than the difference between the other Angle and a Semicircle; The demonstration of most of these Affections are in *Clavius* his Comment on *Theodosius*, or in his Book *de Afrolabio*, where shewing how to project in Plano all the Cases of Spherical Triangles, and so to measure the sides and Angles, he delivers these Theorems to prevent such Fictitious Triangles as cannot exist in the Sphere.