

# ON A NEW ANALYTIC THEORY OF THE MOON’S MOTION I: ORBITAL ANGULAR MOMENTUM\*

RAMON GONZÁLEZ CALVET

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**Abstract.** A new analytic theory of the Moon’s motion is deduced from the Lagrangian of the Sun-Earth-Moon system expressed with relative velocities. In its first-order approximation, the first-degree terms of the ratio of distances from Earth to the Moon and to the Sun are taken. The calculated relative variation in the Moon’s orbital angular momentum is resolved into components whose integrals yield the inclination of the orbital plane, the ecliptic longitude of the ascending node and the norm of the angular momentum as functions of the angle between the Moon and the ascending node.

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## Contents

<b>1</b>	<b>Glossary of Symbols</b>	<b>1</b>
<b>2</b>	<b>Introduction</b>	<b>4</b>
<b>3</b>	<b>The Equations of the Relative Motion of the Three-Body Problem</b>	<b>8</b>
<b>4</b>	<b>The Sun-Earth-Moon Dynamic System</b>	<b>9</b>
<b>5</b>	<b>Zero-Order Approximation</b>	<b>10</b>
<b>6</b>	<b>First-Order Approximation</b>	<b>11</b>
<b>7</b>	<b>Variation of the Orbital Angular Momentum of the Moon</b>	<b>12</b>
7.1	The Observed Orbit of the Moon . . . . .	16
7.2	Variation of the Norm of the Angular Momentum . . . . .	18
7.3	Draconic Month and Angular Momentum . . . . .	24

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\*This paper is the first part of a new analytic theory of the Moon’s motion, which has been split into three parts.