



GULIELMUS OUGHTRED ANGLVS
ex Academia Cantabrigiensi A^tat: 73. 1646.

W. Nollar ad vivum delavit. 1644.

Jacitz Antuerpie A. 1646.

William Oughtred

***"Inventor of the
Slide Rule"***

***died 350 years ago
after a long and
fruitful life***

Name: *William Oughtred*

Birth Date: March 5, 1574

Death Date: June 30 1660
350 years ago

Place of Birth: Eton, Buckinghamshire,
England

Place of Death: Albury, Surrey, England

Nationality: English

Gender: Male

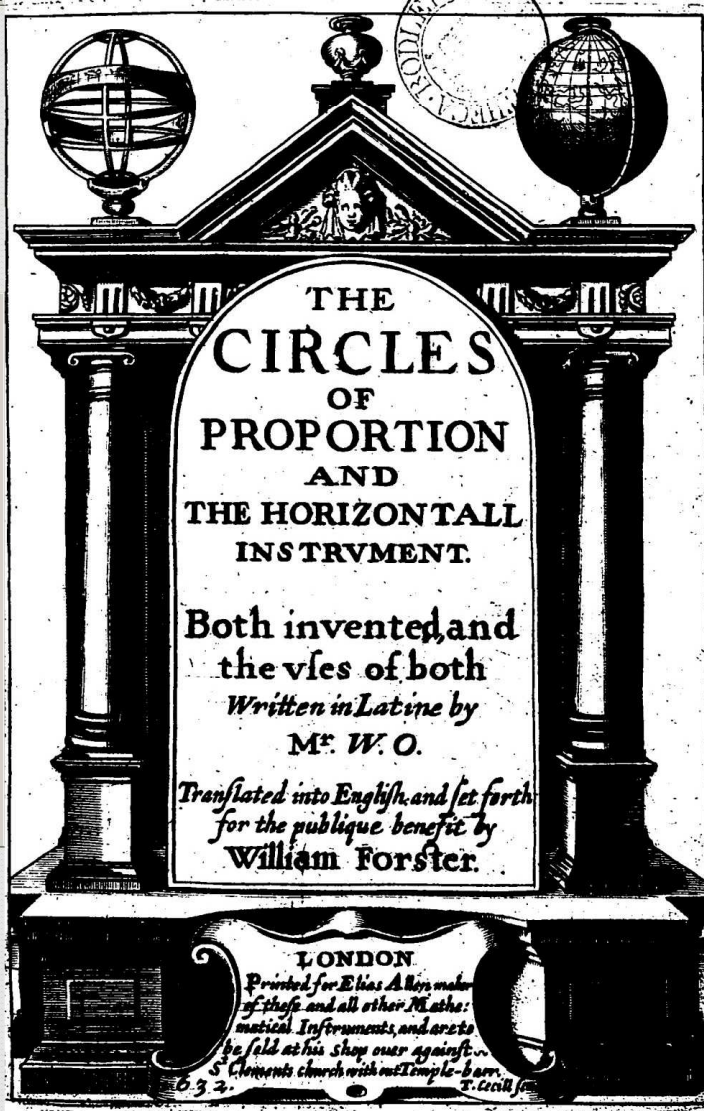
Occupations: mathematician, clergyman,
educator

Oughtred to W. Forster - as reported by the latter

... But said he, seeing you are taken with such
mechanicall ways of instruments, I will shew you
what devises I had had by mee these many years.
And first hee brought to mee two Rulers of that sort,
to be used by applying one to the other, without any
compasses: and after that hee showed mee those
lines cast into a circle of Ring, with another
moveable circle upon it, I seeing the great
expeditensse of both those wayes, but especially, of
the latter, wherein it farre excelleth any other
Instrument which hath bin knowne, told him, I
wounded that hee could so many yeares conceale
such usefull inventions

Oughtred on Instrument Practice vs. Theory

... That the true way of Art is not by Instruments, but by Demonstration: and that it is a preposterous course of Artists, to make their Schollers only doers of tricks, as it were Juglers: to the despite of Art, losse of precious time, and betraying of willing and industrious wits, unto ignorance, and idlenesse. That the use of Instruments is indeed excellent, if a man be an Artist but contemptible, being set and opposed to Art ...



THE
CIRCLES
OF
PROPORTION
AND
THE HORIZONTALL
INSTRUMENT.

Both invented, and
the vses of both
Written in Latine by
M^r. W. O.

*Translated into English, and set forth
for the publique benefit by*
William Forster.

LONDON

*Printed for Elias Alys, maker
of these, and all other Mathe:
matical Instruments, and are to
be sold at his shop over against
St. Clements church with out Temple-bar.*

632.

T. Cecil



THE
FIRST PART
OF THIS BOOKE,

Shewing the vse of the *First side*
of the Instrument, for the working of Pro-
portions both simple and compounded, and
for the ready and easie resolving of que-
stions both in *Arithmetique, Geometrie,*
and *Astronomie*, by Calcu-
lation.

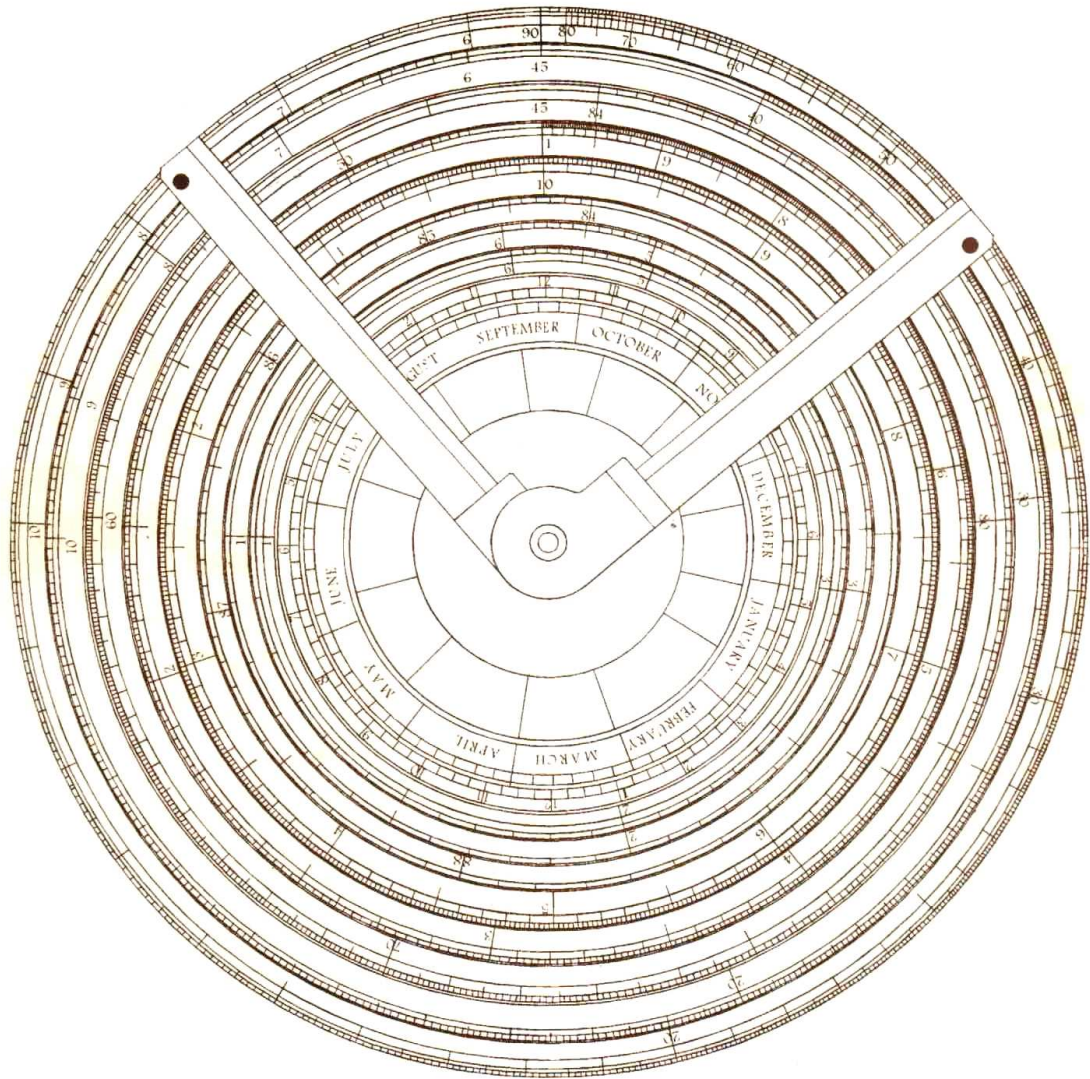
CHAP. I.

Of the Description, and vse of the Circles
in this First side,

Here are two sides of this Instrument. On
the one side, as it were in the *plaine of*
the Horizon, is delineated the *projection of*
the Sphere. On the other side there are di-
vers kinde of Circles, divided after many severall waies;



2 Double horizontal dial and 'circles of proportion' by Robert Davenport, Edinburgh, about 1650. A rare example of the earliest form of slide rule, this is also the earliest signed mathematical instrument made in Scotland. *T.1972.252*



Oughtred's Modesty regarding his Circles of Proportion

My Instrument ... only bows and inflects Gunter's lines.

Oughtred's Agressiveness towards Delamaine

... presented with a most [...] and scuroulous Pamphlet written against me by Richard Delamaine, who professeth himself a Teacher of Mathematickes about the City ...

I did much wonder at it, to see my self so basely and impudently abused by one whom I never had wronged, but had done very much courteous for giving him aces to my chamber in Arundell House day by day, teaching and instructing him that facultie he professeth: not onely satisfying his scruples in those things he partly knew but even laying the very foundation of diverse parts, whereof hee was utterly ignorant

<i>Invention “Circles of Proportion”</i>	1621/1622	1630	1632	1650-'62
Hearsay (documented)	Oughtred (by Forster)			
Published		Delamain (disc and sliding ring)	Oughtred (2 rotating pointers)	
Extant CoP Specimens (no extant Disc and Ring)			E. Allen	Davenport H. Sutton



The Declaration of the two
RULERS for *Calculation*.

THe *Rulers* are so framed and composed, that they may not only be applied to the calculation of *Triangles*, and the resolution of *Arithmetical Questions*: but that they may also very fitly serve for a *Grosse-staffe* to take the height of the *Sunne*, or any *Starre* above the *Horizon*, and also their distances. In which regard I call the longer of the two *Rulers* the *Staffe*, and the *Shorter* the *Transversarie*. And are in length one to the other almost as 3 to 2.

The *Rulers* are just foure square, with right angles: and equall in bignesse: they are thus divided.

The *Transversarie* at the upper end noted with the letters *S, T, N, E*, on the severall sides, hath a *pinnicide* or *sight*: at the lower edge of which sight is the line of the *Radix*, or *Ynite line*, where the divisions beginne.

On the left edge of one of the sides are set the *Degrees* from 0 to 33 degrees. And on the right edge of the same side is set the *line of Sines* from 90 to 1 degree.

In the next side are set two lines of *Tangents*, that on
I the

Oughtred's
description of
"Two Rulers"
(1633)
also known as
Sliding Rods



“THE DECLARATION OF THE TWO RULERS”
Oughtred described two Rulers of unequal length
“which could also be used as Staffe and
Transversarie of a Crosse-Staffe”
(consider this one in the Florentine
Museum for the History of Science)

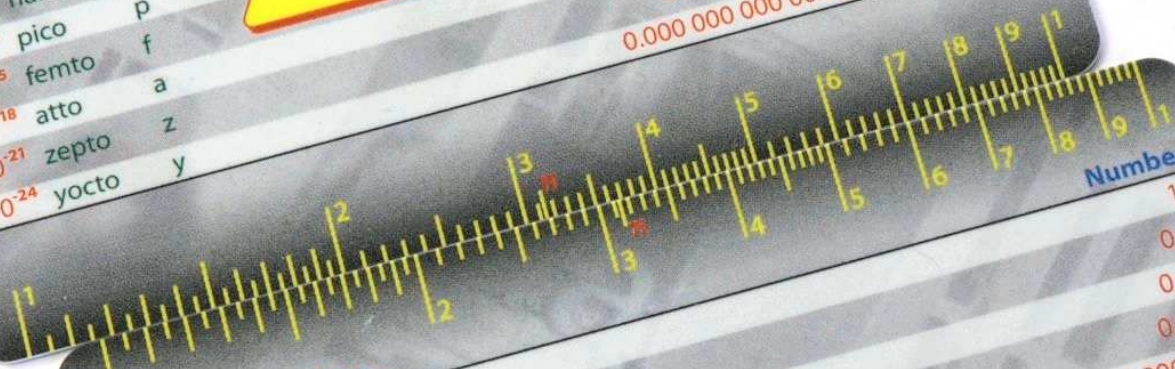
prefix Abbr.

deci	d
centi	c
milli	m
micro	μ
nano	n
pico	p
femto	f
atto	a
zepto	z
yocto	y

1 2 6
1 3

$2 \times 3 = 6$
Calculations by
logarithmic scales

0.000 000 001
0.000 000 000 001
0.000 000 000 000 001
0.000 000 000 000 000 001
0.000 000 000 000 000 000 001



A Modern Version

(Otto van Poelje)

Exp. SI-prefix Abbr.

10^0		
10^{-1}	deci	d
10^{-2}	centi	c
10^{-3}	milli	m
10^{-6}	micro	μ
10^{-9}	nano	n
10^{-12}	pico	p
10^{-15}	femto	f
10^{-18}	atto	a
10^{-21}	zepto	z
10^{-24}	yocto	y

1 2 6
1 3

$2 \times 3 = 6$
Calculations by
logarithmic scales

Number
1
0.1
0.01
0.001
0.000 001
0.000 000 001
0.000 000 000 001
0.000 000 000 000 001
0.000 000 000 000 000 001
0.000 000 000 000 000 000 001

