

Table-A Calculation Formula for Astronomical Easter Calculation, Gregorian Year JD# Method									
A	B	C	D	E	F	G	H	I	J
YR	pEpact	JD#1Jan	JD#JanNM	JD#PFM1	JD#Eqnx	JD#PFM	WkDy	JD# Easter	D#ck
-4000	24.3	260090.45	260113.8	260187.8	260170.2	260187.8	7	260188.8	1
2019	6.0	2458484.8	2458489.8	2458563.8	2458563.4	2458563.8	5	2458566.8	1
Yr	pEPCT	JD#Jan1.3	(B-1)+C	74.02+D	F.3 or F.7	IF(E>=F,E,E+29.5)	f.6(G)	IF(H=1,G+7,8-INT(H)+G)	f.6(i)

The above Table-A is a tabulation of [calculation](#) steps for [finding Astronomical date](#) of Easter. The example calculations use formula-2 of Table-B to determine moment of [January New Moon](#) for selected year, expressed as astronomical Julian Day number, JD#. Alternatively one could use any number of resources to arrive at a value for column B. Just be sure to express the moment as an [Astronomical](#) formatted Julian Day Number, JD#. Julian calendar or Gregorian calendar dates may be verified by the day of week. The numbers in column F, JD#.Equinox, are for [equinox](#) moment by formula 4 of Table B. The month number and day-of-month may be determined in a spreadsheet by adding two more columns and using formula 8 and 9, Table B, given that Year, **Yr**, is stated as input in column-A. Alternatively, the Easter JD# may be converted back to Gregorian Date by several [free programs](#). This routine was compared by 70 dates. If using JMT in place of GMT (UT), then add an offset of 0.098 days to step "I" and "J".

A check was made against the [WCC](#) Easter dates [table](#) for years 2025 to 2001. Against that Table this method using formula 2 and 4 reproduced their result. Other [checked](#) instances returned results that matched either the [Catholic Easter dates](#) or alternative astronomical calculation results. However the data of [Ovidiu Vaduvescu](#) did not confirm the astronomical values set forth in the WCC document nor results of this calculation. If Equinox and PFM dates are closer than one (1) day, verification by a more precise [routine](#) is advised on [slide-9. NEXT N3](#)

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Name (Nu)	TABLE-B Excel Astronomical Name Formula: Yr-year; JD#-Julian Day
pEpact.Cassidy.f1	29.09-MOD(MOD(Yr,19)*11-INT((Yr-1502.57-12*MOD(Yr,19))/228),29.983)
pEpact.Cassidy.0.f1b	29.5-MOD(MOD(Yr,19)*11-INT((Yr-1584-12*MOD(Yr,19))/228),30)
pEpact.Lunation#.f2	IF((1+MOD((365.242454*(-4006-Yr)),29.5306))>=30,((1+MOD((365.242454*(-4006-Yr)),29.5306))-30),(1+MOD((365.242454*(-4006-Yr)),29.5306)))
JD# Jan1.f3	257898.52-365.242454*(-4006-Yr)
JD# Equinox.f4 1st Page	(2457102.448+(Yr-2015)*365.2422)+((-0.0005947871)*((Yr-2015)/1000)^4+(-0.00392591)*((Yr-2015)/1000)^3+(0.013808751)*((Yr-2015)/1000)^2+(0.1590901)*((Yr-2015)/1000))
March 1 st Moon.f5	JD#.Jan1 + pEpact + 59
Day of Week.f6	(1+INT(MOD((1.5+JD#),7))) one is Sunday and 7 is Saturday, etc
JD#21March.f7	257978.00-365.242454*(-4006-Yr)
Day of Month.f8	1+INT(MOD(((INT(MOD(((INT(JD#+0.5))+(-37+INT(0.5+0.75*INT((INT(JD#+0.5)-4479.5)/36524.25)))))-50.25)-365.25))),0.5)+22.5))