shown that the solar year was actually slightly less than 365.25 days long? Un- 
doubtedly this is the case, but it is not a matter of great consequence. Julius 
Caesar was looking for some simple, straightforward rule to replace the mis-
scellaneous which had gone before: having 365 days in most years, but an extra sin-
gle day in one in four, was about as simple as one could get. A leap-year rule 
would have meant that once every four centuries a scheduled leap-year day 
would have meant that once every three centuries a scheduled leap-day 
would need to be skipped. If Julius Caesar could legislate to insert 90 extra 
weeks into one year, then surely some ruler several centuries hence could 
be able to delete a single day! Simplicity was the key to ending the confusion 
which reigned.

The Erroneous Triennial Leap Years

I wrote above that the one-year-every-four-years rule is about as simple as 
the pontificate is often used in a pejorative manner!

The problem arose from the Roman inclusive-counting scheme: what to us 
is every fourth year would have been every fifth year to them. When the Egyptian 
Sosigenes stipulated an extra day every fourth year, this was interpreted by 
the Romans as being one year in three. The supposed Julian calendar was in-
troduced, starting in 45 B.C., and in 44 B.C. Julius Caesar (who, one presumes, 
produced it) was assassinated. And for the subsequent few decades Rome mistakenly employed a cycle of two common years 
followed by a leap year, thus allowing the calendar to lag progressively behind the seasons.

As a matter of fact we do not know for sure which one-in-three years were 
leap years in this period, but by about 9 B.C. the problem was obvious, at least 
to the astronomers, with twelve rather than nine leap years having been de-
ployed since the Julian reform.

As a result Augustus declared a moratorium to let the dates catch up with the seasons, and there were no leap years again until over a decade later. Again, we are not sure whether the next leap year was A.D. 4 or A.D. 8, but from then through to A.D. 1700 every fourth year was a leap year in all countries which 
ied since the Julian reform.

The Lengths of the Months Post-Reform

How long were the months after the Julian reform? I wrote above that the ten 
additional days (eleven in a leap year) were spread over the months, but this was 
done unevenly. Julius Caesar added two days each onto the ends of January, Sex-
tilia (now August), and December, and one to April, June, September, and No-
ember; in a leap year an extra day was inserted into February (my terminology 
here is important: that day was not just tacked onto the end of that month, as we 
will see). The pre- and post-reform month lengths were therefore as follows:

<table>
<thead>
<tr>
<th>Month</th>
<th>Before Julian reform</th>
<th>After Julian reform</th>
</tr>
</thead>
<tbody>
<tr>
<td>Januarius</td>
<td>29</td>
<td>31</td>
</tr>
<tr>
<td>Februarius</td>
<td>28</td>
<td>28/29</td>
</tr>
<tr>
<td>(Intercalaris’)</td>
<td>22 or 23</td>
<td></td>
</tr>
<tr>
<td>Martius</td>
<td>31</td>
<td>31</td>
</tr>
<tr>
<td>Aprilis</td>
<td>31</td>
<td>31</td>
</tr>
<tr>
<td>Maius</td>
<td>31</td>
<td>31</td>
</tr>
<tr>
<td>Junius</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td>Quintilis</td>
<td>31</td>
<td>31</td>
</tr>
<tr>
<td>Sextilis</td>
<td>29</td>
<td>31</td>
</tr>
<tr>
<td>September</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td>October</td>
<td>31</td>
<td>31</td>
</tr>
<tr>
<td>November</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td>December</td>
<td>29</td>
<td>31</td>
</tr>
<tr>
<td>Total</td>
<td>355 (plus 22 or 23)</td>
<td>365/366</td>
</tr>
</tbody>
</table>

than the seventh month, but actually in Latin they are all adjectival in form with the qualifying mensis (month) usually being omitted but always understood. Thus 
I believe that the oft-stated opinion that the names of September through De-
ember implied them to be the seventh through tenth months in an early Roman 
calendar is another fallacy, at least in terms of our exclusive-counting system.

A possible solution is that the Roman year, when these months got their names, began with April. This makes sense, astronomically speaking, because 
the vernal equinox (and hence the start of the seasonal year) was occurring 
close to the end of March in the early part of the first millennium B.C. Addition-

support comes from the fact that the Romans believed their city to have 
been founded in April (of 753 B.C.). My comments in this connection are 
somewhat speculative, but I think worthy of consideration. I am not aware of 
this apparent anomaly having been pointed out elsewhere.