the available light is in the rings sur
ing the Airy disk.

The shrinking of the Airy disk
accompanies a central obstruction is
ably of little practical use. Accord
Principles of Optics by Max Bor
Emil Wolf (Pergamon Press, 1959),
limiting case of an almost wholly ob
ed aperture, the Airy disk shrinks
percent of its original diameter. T
might expect to improve the resolut
a 6-inch telescope (normally 0.9 sec
arc) to about 0.6 second by suspen
5½-inch opaque mask over the tel
tube. The drawback of this ide
readers who try it will see, is an intol
enhancement of the diffraction ring
to mention the great exclusion of st
from the telescope!

Beginners sometimes assume th
luminous rays or spikes around
stars in a Newtonian or Cassegra
caused by *reflection* of starlight gl
off the vanes that support the sec
mirror. The telescope making boo
them *diffraction* spikes, notwithst
Dr. Blöte's conclusion that any diff
effect is slight. But the French a
mer A. Danjon believed that as the
cool off at night they become surro
by a layer of warm air that creat
spikes by *refraction,* and his collea
Couder was able to eliminate them b
ering the vanes with polished alum
Further experiments would be of int

Dr. Blöte points out that the unit
and r_2 in his table are equival
seconds of arc for a 4.5-inch telesco
follows that we can multiply any of
values by 4.5 and divide by some
aperture in inches, *A,* to obtain th
of its diffraction pattern in seconds
For the unobstructed case (and nea
for the others), the angular radius
first dark ring is given by 5".5/*A*,
the second dark ring by 10".0/*A*.

How might this information help
server? Consider the double star A
for which the following data were
on page 461 of the June, 1977, issu
aration 2".6, magnitudes 0.9 and 5.1
is normally a rather difficult pair fo
telescopes, because the 4.2-magnitu
equality of the components correspo
a brightness ratio of 1 to 0.020,
puts the companion at very near
same intensity as the main star's
bright ring (I_1 in table on page 351)

But if the companion should fall
the first or second *dark* ring, it ou
show up at high power as a small g
speck of light. By the relations
above, it will lie in the first dar
when a 2.1-inch telescope is used,
the second dark ring with a 3.9-inc
ought to be easier to see with eit
these apertures than with a 3-inch!
ers who test this prediction are inv
send me their reports.

R.

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