

Hardwick Parsonage, 52
Dec. 19. 1866.

My dear young friend,

Thank you for your kind letter, which I was very pleased to get. And first of all as to the business of it. I cannot very well answer your enquiry directly, because it involves many things which I can't get at. - The value of such a thing depends solely upon its accuracy - ~~which one has~~ (I mean its being originally well-made) - It may be, as Baker says, "in very excellent" (by which I presume he means, "condition") but this has nothing to do with its original correctness. Baker was well spoken of by De la Rue & me - & I fancy he is an honest tho' not cheap trader. But I conceive he would, & could, only look to the ^{present} condition of such an article & if it has no maker's name upon it (if there had been a W. name tho' for) you have no real guarantee. Nevertheless it cannot be clean. I have one (I

have so pleasant a recollection of our Regi-
scheideck walk - & of that delightful service
at S. Pauli. -

Mr. Slack (Editor of Int. Obs.) where by the
way is some curious Lunar News for Jan^{ry})
has been puzzling me by some curious & I think
original speculations as to the radiation of
light. He thinks comparatively small surfaces
at an enormous distance would receive, not the
divergent, but the parallel rays of light only -
i.e. supposing the radiant to be not a point but a
surface (such as the Sun's disc) ~~the~~ such the
divergent rays would pass by each side of them
they would only get such rays as issuing from dif-
ferent points, & belonging to different pencils, would
be parallel among themselves. This I see is a fall-
lacy, because, even if they did not receive the di-
vergent rays from any one point, they would catch
them from the surrounding points (of a disc
of similar magnitude). But it does seem
to me to involve a curious question, which

is not mistaken, is just such an one as you
like to puzzle with. The undulations of light be-
ing admitted to have some transverse magnitude
(I think you called it ϵ in your explanation of
my last difficulty) supposing them to be emitted
from a radiant point, & propagated through space,
would there be limits either way? I. e. in their
first origin, might not the radiant surface be sub-
sided so small that the vibrations would be packed
too close all round it - & for a given distance from
it - to exist without interference & ~~destructive~~ mutual
destruction? I. g. what ϵ ? Is the result of
the value of ϵ equalled or exceeded the dimensions
of the radiant point? - And secondly, the
other way - in the progress of the radiation thro
space, all these ϵ s being propagated in diverging
lines - since they have after all a material & not
a metaphysical existence, & possess a positive
magnitude, however small, will a degree of di-
vergence ever be reached at which they will leave
interspaces - travelling on in separate lines with

vacancy between them? or at least only such
~~transverse~~ ^{lateral} undulations as they might cause in
the ether, which not being emanations from the
radiant, would not affect the distant bodies
light? - I fancy on the corpuscular theory
of light, this difficulty might find a place - for
however small the particles might be, yet you could
conceive them either packed too close towards the
centre, or opened out too wide towards the cir-
cumference, of an unlimited sphere, to admit
of the production of light. Whether it may be
any clearer (I mean the question, not the light!)
on the undulatory theory I do not very well see -
but I think there is something in it - i.e. I
fancy some effect must follow somewhere
from the not infinite relation of light to space
(I don't know whether I have expressed this
properly - I mean, the fact that ϵ is not in-
finitely small; however minute it may be it has
yet an assignable magnitude, & \therefore ~~must~~ is

theoretically capable of too great compression, or
too wide expansion. - And it just strikes me
would it be conceivable that some such cause
might affect the twinkling of the stars? I sup-
pose not, however, for that seems to be related to
climate & atmosphere (tho' still involving I fancy
a relation of ϵ to the magnitude of the particles of
vapour &c. in the atmosphere. Or is it not con-
ceivable that the ~~of~~ want of perfect transparency
exhibited to space, may be due to some such cause?
I leave this over to you - & I will communi-
cate your answer to Mr. Stack. -

Believe me, with all possible kind
wishes for the coming season,

My dear young friend,
Yours most affectionately
J. W. Webb

George said her love - she will write when

life busy - she understands now the mystery
of the Photo. - it is inside instead of out
side life - she had fancied it was some
mountainous refection, which puzzled
her. She is growing disappointed. What you
do not come, as she will have such a nice
party on New Year's day to meet you, &
for the sake of your own eye. You must
always say no to our invitations -
"naughty boy" - -