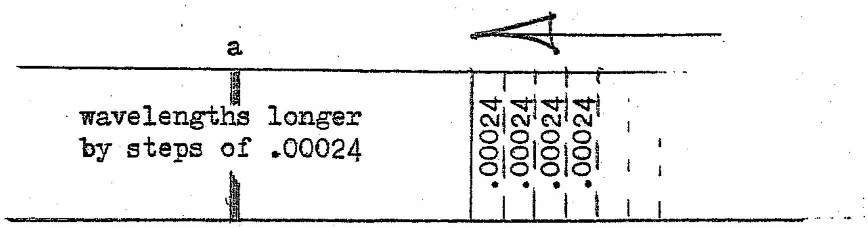
03/02/2006

THE MECHANISM

of the

REDSHIFTS



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The Mechanism of the REDSHIFTS.   03 / 02 / 2006

There are two types of redshift proposed:

TYPE 1 Relative velocity Red and Blue Shifts.
These are characteristically "local".

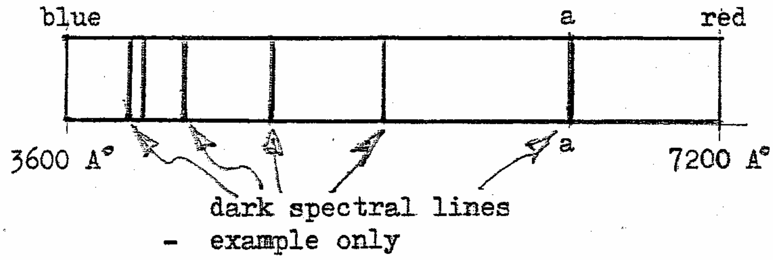
TYPE 2 Cdk, accumulative, quantized Red-only Shifts.
These become more dominant than the Type 1, the further we look out.

TYPE 1 SHIFTS. Relative velocity Red and Blue Shifts.
Let us consider the mechanism of the Type 1 shifts: because this mechanism is the same operation as the cdk shifts.

A star radiates a continuous visible colour spectrum. And an invisible spectrum beyond each end of the visible spectrum.
The visible spectrum is restricted by wavelengths at each end: some 7200 A° at the red end, and some 3600 A° at the blue end.

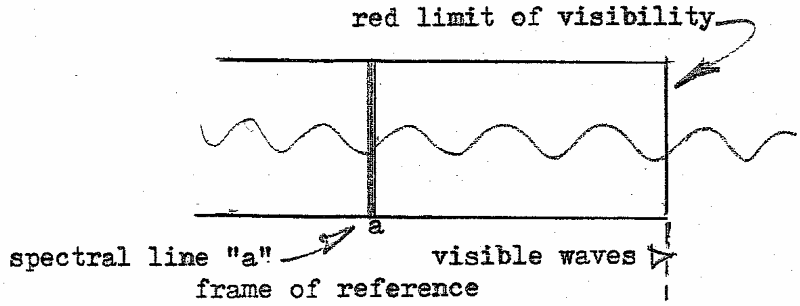
The visible spectrum is interrupted by the dark absorption lines, where cooler, non-incandescent gases surrounding the star have absorbed light, at the wavelengths they would normally radiate at, if made incandescent.

This is what a spectrum looks like.



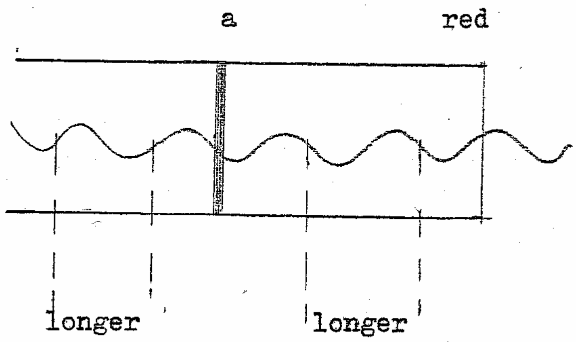
The lines are the spectral lines where light has been <u>absorbed</u> by the surrounding cooler gases. The colours are, in right-to-left order: red, orange, yellow, green, blue, indigo, violet. Let us consider in detail the small section of the spectrum containing the spectral line labelled "a", and containing also the red end limit of visibility. Note that the whole outline of the ribbon from the red to the blue, is a "frame of reference" wherein we view the colours, that is, the visible wavelengths.

Consider the diagram below.....



The wavelengths of the light are different for the different colours. We can see to the limits of the red because it has a certain wavelength.

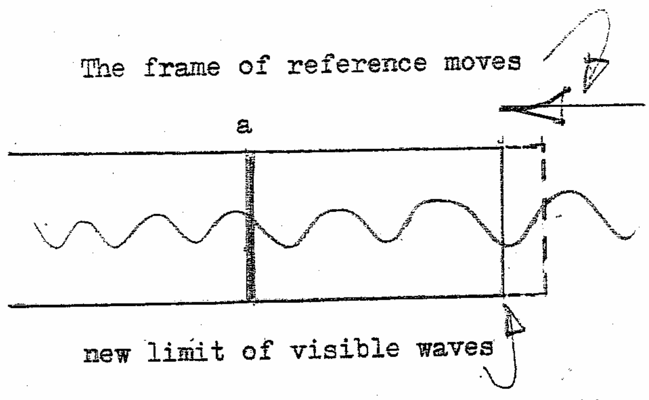
Now consider the following diagram.....



Suppose that the wavelengths have been lengthened a little bit by a Doppler effect from an object moving away.

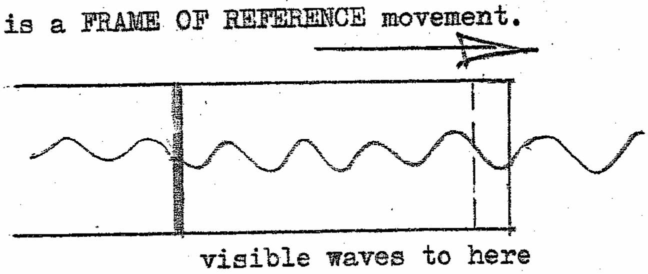
ALL the wavelengths down the spectrum will lengthen. So ALL the colours will "redden" slightly.

The blues will "redden" so we can look a bit further into the continuation of the blue end of the spectrum. And because the red end of the spectrum has lengthened in wavelength, we can no longer see as far into that end of the spectrum.



The FRAME OF REFERENCE moves to the new limits of visible wavelength. (The spectral line does not move.) Because there is no colour in the dark lines, we can see the relative shift of the frame of reference. The spectral line "a" "moves toward the red" or is "redshifted". All the other spectral lines move too, of course.

A BLUE SHIFT, from an object moving toward us, does just the reverse, by a <u>shortening</u> of the wavelengths. We then look <u>further</u> into the red and less into the blue, causing a "blue shift" of all the spectral lines. The mechanism is a FRAME OF REFERENCE movement.



Spectral line appears to move away from the red, toward the blue, hence, "blue shift".

TYPE 2 REDSHIFTS - cdk accumulative, quantized, red-only.

These redshifts become increasingly dominant with "look-back" time. Note that the "lollo"- cdk model shows only some 6224 (+1) years of actual time, (the age of light available to astronomers) and the maximum travel of that light is 1.5×10^9 light-years since cdk.

$$\frac{1.5 \times 10^9}{6224} = .00024 \times 10^9$$

We now propose that as light folds up, the lumpy bit adds a tiny little bit to the wavelength as it comes in.

So that the light from distant sources has a little more wavelength overall than from the nearer sources.

And, of course, as in Type 1 redshifts, THE SLIGHTLY LONGER WAVELENGTH causes the FRAME of REFERENCE SHIFT - just as in Type 1 .

However, this time the shift is QUANTIZED at $\Delta\lambda =$ .00024

These quantized steps add step-on-step as we move out.