

Re: what's light emitted by protons look like?

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- *From:* "Androcles" <Headmaster@xxxxxxxxxxxxxxxxxxxx>
 - *Date:* Sat, 28 Oct 2006 04:02:13 GMT
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"The Ghost In The Machine" <ewill@xxxxxxxxxxxxxxxxxxxxxxxx> wrote in message news:j9oa14-ou2.ln1@xxxxxxxxxxxxxxxxxxxxxxxx

| In sci.physics, OG

| <owen@xxxxxxxxxxxxxxxxxxxx>

| wrote

| on Sat, 28 Oct 2006 01:04:58 +0100

| <4qfl59Fm4fo8U1@xxxxxxxxxxxxxxxx>:

| >

| > "Sorcerer" <Headmaster@xxxxxxxxxxxxxxxxxxxx> wrote in message

| > [news:cGSYg.145161\\$P3.20368@xxxxxxxxxxxxxxxxxxxxxxxx](mailto:news:cGSYg.145161$P3.20368@xxxxxxxxxxxxxxxxxxxxxxxx)

| >>

| >> "OG" <owen@xxxxxxxxxxxxxxxxxxxx> wrote in message

| >> | Photon emission due to electron transition between

| >> | atomic quantum energy levels is not due to

| >> | 'acceleration' of the electron charge as per

| >> | Maxwell's equations.

| >> |

| >> And that's the word of Mighty DOG, is it?

| >>

| >> Allow me to add:

| >> Photons emitted as atomic spectra are certainly NOT due to

| >> bright green flying elephants passing my window.

| >> Photons emitted as atomic spectra are certainly NOT due to

| >> the accelerated neuron of Mighty Dumb OG.

| >>

| >> What I was asking you, Dumbfuck OG, is what photons emitted as

| >> atomic spectra ARE due to? (Not that I expect you to have a fucking clue.)

| >>

| >

| > No way did you ask that particular question

| > So Shhhh.

| >

|

| Perhaps not, but it is a valid question, nonetheless.

| Admittedly, I'm not at all sure that anyone's actually

| *answered* it as such; the best I can do is that light from

| emissive spectra is caused from electron shell transitions,

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| as you've already mentioned.

|
| The Lyman series in particular is caused by transitions
| from a higher shell level to the 1s shell; the Balmer
| series is caused by transitions from a higher shell level
| to either 2s or 2p (it probably doesn't matter unless an
| electric or magnetic field is applied to the sample).

|
| However, that doesn't answer the question of *why*, merely *what*.

Why did J C Maxwell die before J J Thompson invented the electron?

|
| We also know how, to some extent; ionized neon and argon
| gas is routinely used for various display purposes, with a
| small transformer providing voltage to a tube filled with
| the appropriate gas. (It is theoretically possible to do the
| same with a tube of hydrogen gas but there are probably a lot
| of issues regarding liabilities of using such tubes in window
| signage. ;-))

Theoretically:

<http://tinyurl.com/tqm6d>

What planet are you from?

| I'm also curious as to the half-life angle. Briefly,
| if a number of hydrogen atoms (presumably each part of a
| diatomic gas but that's an interesting question in itself)
| has an electron in the 2s state, how long before half
| of them have jumped to the 1s state? Is such an effect
| temperature and/or pressure dependent?

At the molecular level temperature and pressure become
confused and meaningless, they are macroscopic terms.
Pressure is the number of molecules occupying a given volume
and temperature is their mean speed.

By "bumping" a molecule you are giving it energy, and that energy
is then radiated (EM) and also causes the molecule to move inertially,
according to Newton's first law. Kinetic energy is relative,
after collision there isn't any between the colliding bodies.
The bumped or nudged molecule can then collide with another
and radiate again, causing a gradual reduction in mean speed
of the group and a "cooling" of temperature.
At zero Kelvin all electrons are in the ground state.

<http://www.androcles01.pwp.blueyonder.co.uk/rephoton.gif>

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Of course this image is not especially remarkable, it is simply double-slit "inverted" and the basis of phased-array radar.

Photons are shown leaving the vibrating molecule vertically, one up, one down.

If the molecule stops vibrating, no energy is radiated.

For every photon there is an equal and opposite rephoton. —

(Androcles' Third Law)

In my youth I used to wonder what inertia was, but now I understand it.

All of physics can be reduced to my lion, Newton, upon whose shoulders I stand.

Androcles

.