Re: Caring for microscopes

Source: http://sci.tech−archive.net/Archive/sci.techniques.microscopy/2008−06/msg00045.html

- *From*: jmchone@xxxxxxxxxxxxxx
- *Date*: Sun, 29 Jun 2008 11:21:40 −0700 (PDT)

On Jun 29, 2:10 pm, Kevin Cunningham <sms...@xxxxxxxxxxxxxx> wrote:

> Sir;
>
> Your cleaning advice is close to dangerous. The critical one is:
>
> Always clean wet, not dry.
> (repeat endlessly)
>
> If is crucial to clean wet. Your trying to float the dirt up and
> either into the cleaning tissue, not trying to rub it in deeper.
> Remember if you clean dry you will scratch either the glass or the
> coating material. By the way, coating material is mostly harder than
> glass so you want as much coated glass as possible. For a cleaning
> solution use any high vapor pressure chemical, however most high vapor
> pressure chemicals are rather deadly so I recommend alcohol, heptane
> and water based cleaner like Windex or Sparkle. Heptane is safe but
> hard to get so mostly alcohol will have to do. Make sure your work
> area is well ventilated.
>
> It is not crucial to capture the dirt in the cleaning tissue, if you
> can push it to the edge that's good enough, usually. You want the
> glass area used by the instrument to be scrupulously clean though.
>
> The cleaning material can be Kim−Wipes of a simple Tissue like
> Kleenex. Don't purchase tissues that have lotions on them that protect
> your nose, they just won't work. I use Kim−Wipes since they are
> readily available but when push comes to shove I've used Kleenex and
> Publix brand tissues. You may have to clean the surface off with
> either canned air or an ear syringe (!) but both work well to get rid
> of dust. Tissues just add a bit more dust to the equation.
>
> Dip the tissue into the water based cleaner then into some alcohol, I
> use Menda bottles but they're expensive. Start from the center and
> wipe to the edges. Throw the tissue away. Repeat until clean. Wipe
> in the same pattern with a dry tissue to remove moisture. If your
> only using alcohol, depends what's on the lens, then you probably
> won't have to wipe it dry, just shake the tissue about three times or

> so and wipe from the center out.
>
> Camera lens cleaners don't work for cameras, my wife used to own half of a camera repair company, they just get the dirt mad at you. The green lens cleaner that just about ever one buys is worthless, its a mixture of vinegar and water essentially.
>
> If your cleaning objectives go to Wal−Mart or a good hardware store and buy a cheap, small LED flashlight so you can illuminate the area your cleaning either from the front or back. That helps you visualize the dirt. Use a reversed eyepiece as a magnifier. If you need a longer reach to get to the back of an objective use a whole Kim−Wipe and wrap it around a diamond holders tweezers (a long reach, relatively soft tough tweezers) with a lot of Kim−Wipe hanging of the front.
>
> Be gentle but be firm.
>
> Then there's lubricating, disassembly, etc.
>
> I don't want to stop you or discourage you from writing about microscopes but you might want to consult with your local technical people. I've been in the craft of microscopes since '78, it is not the simplest field in the world. They're is a lot to learn, from cleaning to electronics to physics to mechanical engineering and I don't know it all, I learn every day.
>
> Thanks,
>
> Kevin Cunningham

Yes, it is always good to learn something new, and I appreciate your advice. My camera lens cleaning solution is alcohol based and I assumed they were all like that. It works well and leaves no residue (and no stink). I was told back when I was a student myself that Kleenex and any wood−based paper will contain silica particles and are not suitable for lens cleaning. Kimwipes are widely used in labs (including mine) but most folks will not have them at home. My eBay guide already says you should first try to blow off loose dust or dirt, never use a dry cloth on a lens, and to work from the center outward, but I could emphasize that better. Students sitting in a teaching lab and probably many users at home have no access to a technician, and when teaching optical mineralogy I had to provide some instruction on safely handling and setting up the instrument, before launching into the methodology of rock and mineral analysis. Persuading the chairman and dean to fund visits each semester from a service technician for cleaning and adjusting was impossible (I tried), so cleaning, adjusting, setups, and lamp replacement etc. generally fall to the faculty member teaching the course. It is certainly not a trivial task and not always self evident either. Only

a professional like you can provide true technical advice and service, so I will stick to a few simple basics. Thanks from J. G. McHone

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