



## Eye specialist with an unusual clientele - Dr Claudia Stern

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### **For this doctor at DLR's Institute of Aerospace Medicine, variety is pre-programmed**

The door to the examination room opens and ophthalmologist Dr Claudia Stern hurries across the hall of the aerospace medicine examination centre in the Institute of Aerospace Medicine, part of the German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR). She quickly fetches a test frame that is needed to complete the eye test for a prospective glider pilot. Experienced astronauts, private and career pilots, balloonists, airship pilots and glider pilots always come to Claudia Stern when they have to prove that they are fit to undertake aeronautical activities. Claudia Stern examines more than 700 pilots annually from across Germany, as well as all European astronauts.

### **Whether they are fit or unfit also means Yes or No with regards to their licenses**

For the pilots and astronauts, a lot depends on the examination with Claudia Stern, as the results are taken into account when deciding whether or not they will continue to be allowed to fly. Among other things, she examines the intraocular pressure, the field of vision and the reaction of the eye to movement. Her patients nervously await the examination results and Claudia Stern must occasionally deliver bad news. "If a young 14-year-old has discovered a passion for flying and cannot fulfil the capability requirements it affects me too", admits the eye specialist. However, in such cases Claudia Stern can still provide hope and identify possibilities for fulfilling the requirements in future. She provides specific advice to those involved concerning therapies that are available for their eye complaint. It is generally older and experienced aviators to whom she delivers the really bad news. When describing meetings with experienced aviators, Claudia Stern says "I often hear 'But I can see everything', however this subjective visual impression is not sufficient to extend a flying license in the case of a severe illness. Then try telling these patients that they are no longer allowed to fly. That's tough!" In many cases the astronauts, airmen and pilots have been coming to Claudia Stern for years. She knows her clientele well, just as she knows the professional standards that are required of astronauts, airmen and pilots. She understands most of them from her experience as a passenger gained on various aircraft. Her experience ranges from aerobatics in vintage aeroplanes to helicopter night-flights and flights in zero gravity conditions.

### **Variety and exciting challenges**

Claudia Stern has been a member of the team at the DLR Institute of Aerospace Medicine's aerospace medicine examination centre in the capacity of eye specialist for twelve years. She performs a wide variety of tasks, which include a lot more than eye examinations. When she is not performing examinations she deals with the use and application of so-called night vision goggles. This term refers to glasses that amplify small amounts of light that are present in darkness. These goggles are worn, for example, by federal police helicopter pilots at night. However, one has to learn to see well with these goggles. Claudia Stern explains to the users of this technology how such amplifying goggles are adjusted and what types of corrective personal glasses are suitable for whom.

### **From the DLR library to the aerospace medicine examination centre**

The move towards space science began while she was completing her medical degree. For her research theses on the topic of aviation medicine she researched literature in the library of DLR at Cologne. She was immediately fascinated by the diverse medical topics and it was clear to her that she wanted to work at DLR in the area of aviation medicine. In 1996 Claudia Stern was able to combine her personal interest in flying and parachute jumps with her academic

education and enter the field of aviation medicine at the German Aerospace Center. During her studies she had already learned to glide and she still starts to rhapsodise when she thinks of her gliding training. However, her eyes take on a special brightness when Claudia Stern talks about her first jump. Against the will of her parents she dared to take her first parachute jump at the age of 18. This feeling of unimagined freedom impressed itself upon Claudia Stern and she associates this with flying.

### **Fully committed to pilots and air traffic controllers**

If she dares to look into the future there are two points that mean a lot to her. On the personal side it is her two children who provide her, in her own words, with another perspective on life. On the professional side it is internationally uniform capability requirements for pilots and air traffic controllers. Claudia Stern is working passionately on this topic. To her it is still incomprehensible that national requirements for pilots and air traffic controllers differ despite the fact that they all work under the same sky. This inconsistency provided her with a reason early on to become involved in international committees. As a result she became involved in a professional group within the European Society of Aerospace Medicine (ESAM) and in a NATO exploratory team, and is now attempting to promote the topic together with her international colleagues. As Vice-President of the German Society of Aerospace Medicine, she works together with others to improve the level of safety in the field of space travel. "In order to be able to participate in international working groups I need to travel a lot, and I am happy that my commitments can be combined so well with my job here, and that my superiors show understanding in this regard", says Claudia Stern. She uses the inspiration that she gains from the international exchange with colleagues for conferences in Germany. She speaks regularly in front of guests from all corners of the globe on the topic of demands made on the eye, for example, at a Lufthansa aviation symposium. Global conferences are just as familiar to Claudia Stern as the everyday eye examinations. Finally, she leaves us in no doubt as to the fact that she has fun at work and is passionate about it: "In the morning I think often think when arriving at the aviation medicine centre: It's so nice that I am able to be here."

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### **Contacts**

*Dr. med. Claudia Stern*  
*German Aerospace Center (DLR)*  
*Institute of Aerospace Medicine, Medical Operations*  
*Tel.: +49 2203 601-3368*  
*Fax: +49 2203 601-4776*

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### **Claudia Stern looks deep into the eyes of her patients**



Claudia Stern examines airplane pilots, astronauts and airship pilots with the greatest of care. The eye examination is a part of the comprehensive fitness examinations that are carried out at DLR's Institute of Aerospace Medicine.

Credit: DLR (CC-BY 3.0).

## DLR's eye specialist Claudia Stern measures curvature of the cornea



The keratograph shows Claudia Stern a profile of the cornea. Using this profile she can detect, in addition to the curvature, the condition of the surface of the cornea and possible illnesses.

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