

Hello, 2011!

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[Image: happy.gif \(Click to view\)](#)

2010 has already become history. On this first day of 2011, BoJone wishes everyone a Happy New Year! May your life, studies, and work all reach new heights! I am eager to continue exploring and sharing science with all of you!

I have always wanted to properly summarize the events of the past year, but I have been constantly delayed by various tasks. In 2010, the most memorable experience was undoubtedly going through the entire process of an astronomy competition. From the preliminary rounds in March to the finals in Guyuan, Ningxia in May, followed by the intensive training in Beijing in July, and finally the IOAA (International Olympiad on Astronomy and Astrophysics) in Beijing in late September—every step of that journey remains vivid in my mind.

People often ask me what I gained from participating in the astronomy competition. From a utilitarian perspective, I gained almost nothing; in fact, I "spent" quite a bit. However, from a different perspective, I harvested so much: friendship, experience (life lessons), knowledge... with all of this, isn't it something to be proud of?

In 2010, I grew up a lot, and my horizons broadened significantly. Soaring in the sky of astronomy and learning, my wings have become stronger, and I can see further. My personal values have been further strengthened, and I have learned to understand things more dialectically (though I am still quite impulsive, haha). At the same time, I have become much more optimistic and cheerful. I laugh constantly in class every day, especially during the days spent studying with Huang Jin (my desk mate), which were so full of joy. On the path of exploration, having a close friend by one's side is undoubtedly the happiest thing. Whether we made progress or failed an exam, we were always the ones laughing the loudest in class. I love this version of myself—not hiding my inner emotions, looking at everything with a smile, saying what I want to say, and bringing some life to a quiet classroom. I dislike environments of "dead silence" (which is not the same as silence, nor does it mean that noise is always good). It is not wrong for everyone to strive for their own goals, but if everyone only cares about their own struggle without integrating into the collective, that struggle becomes dry, and the failure rate of such a struggle is very high.

Emotionally, I have more deeply understood how to cherish—to cherish every person around me and every emotion. Whether it is family affection or friendship, my experiences have become more profound. At home, I understand the depth of my parents' love, and for this, I strive to learn empathy and be more considerate of them. At school, the presence of friends makes me feel invigorated; whether they are rivals or classmates, they are all precious. I must also mention my lovely younger sister, an outstanding girl from whom I have also learned a lot. I am trying and working hard to grasp every emotion, wishing for them to become brilliant flowers in the garden of my life.

In my scientific studies, I have also achieved some results. Looking back at when I just started my first year of high school last year, I didn't know much about calculus, let alone other higher mathematics. Now, while my knowledge is still not extensive, I can manage general differential



Figure 1: Starry Trails in the Green Field

equations, and my rational thinking has strengthened, allowing me to analyze problems of interest with direction and purpose. In this regard, I must mention my blog, "Scientific Space." The National Astronomical Observatories provided this platform where I can share my hobbies with other science enthusiasts. Basically, all the achievements I have made so far can be found here. In 2010, I had two articles that I am particularly proud of: first, "*Details of Lagrange Points*," which solved the Lagrange point problem of the general three-body problem using purely algebraic methods; second, "*Solving the Corrector Equation for Non-parabolic Telescopes*," which is currently in the review stage at *Physics Bulletin*. This solved the corrector plate equation in optical telescopes and deepened my understanding of optics and vectors.

While there were many gains, there were also many regrets. One of them was visiting Beijing twice but failing to see LAMOST with my own eyes. In terms of studies, my regret is not being able to further improve my school curriculum knowledge. In astronomy, my regret is not conducting an in-depth study of the three-body problem, especially its periodic solutions. Regarding life and emotions, I must say I missed many opportunities, haha. Many times, even though I knew the right thing to do, I didn't do it; sometimes, I hurt others due to my impulsiveness. In short, although I am much more mature than before, I am still quite immature.

Looking forward to 2011, I hope to gain a deeper understanding of physical mechanics, which requires me to make my mathematical foundation even more solid. At the same time, I hope to learn more about modern physics, especially relativity and quantum mechanics, and to take on the challenge of the three-body problem. I hope to publish one or two articles in journals like *Physics Bulletin* and to pass the Peking University Astronomy Summer Camp. Oh, and another wish is to improve my English level significantly. I almost forgot—I also need to conquer my carelessness!

It seems I have quite a few hopes... but I am still dreaming beautifully and trying hard. Because if I don't try, I won't even have the right to hope.

Everyone, keep going! 2011, let's move forward together!

Review of 2010:

- "*Precise Law of Free Fall*": <https://kexue.fm/archives/337/>
- "*Atmospheric Extinction and Refraction*": <https://kexue.fm/archives/507/>
- "*Equations and the Universe*" Series: *The Two-Body Problem*: <https://kexue.fm/archives/549/>
- "*The Ultimate Algorithm for Solving Equations via Numerical Methods*": <https://kexue.fm/archives/590/>
- "*An Extraordinary Astronomy Olympiad*": <https://kexue.fm/archives/613/>
- "*The Period of a Simple Pendulum*": <https://kexue.fm/archives/674/>
- "*Studying Cosmology from the Perspective of Newtonian Mechanics*": <https://kexue.fm/archives/684/>
- "*Vector*" Series: <https://kexue.fm/archives/701/>
- "*How a Rotating Spring Elongates*": <https://kexue.fm/archives/782/>
- "*Trigonometric Solution for Cubic Equations*": <https://kexue.fm/archives/831/>
- "*Details of Lagrange Points*": <https://kexue.fm/archives/861/>
- "*Series Summation — Approximate Infinite Series*": <https://kexue.fm/archives/922/>
- "*The Future Hub of Heaven and Earth — Space Elevator*": <https://kexue.fm/archives/994/>
- "*A Brief Analysis of Solar Sail Technology*": <https://kexue.fm/archives/1023/>

- "The Cow-Chasing Problem": <https://kexue.fm/archives/1047/>
- "The Light-Gathering Surface of a Telescope": <https://kexue.fm/archives/1055/>
- "Natural Extremum" Series: <https://kexue.fm/archives/1065/>

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